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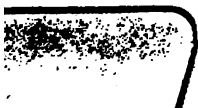
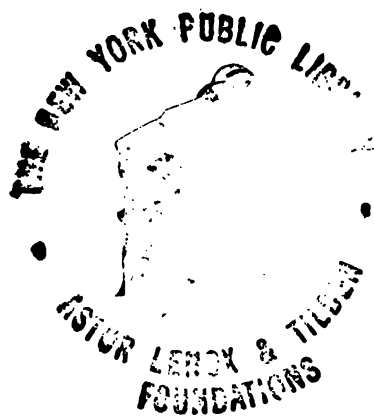
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CATALOGUE.

By Authority of the Commissioners.



THE LONDON INTERNATIONAL EXHIBITION  
OF 1873.

THE VICTORIAN EXHIBITION,

OPENED 6TH NOVEMBER, 1872.

Official Catalogue of Exhibits.

DIVISSIMA TERRA.

MELBOURNE:

Printed for the Commissioners by

MASON, FIRTH, & M'CUTCHEON,

51 & 53 BLINDERS LANE WEST.

1873.





*Victoria, Australia. International Exhibition of London 1873.*  
*Commission for the.*

BY AUTHORITY OF THE COMMISSIONERS.



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51 & 53 FLINDERS LANE WEST.

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THE progress made by the Industrial and Technological Museum is indicated in a statistical statement issued on behalf of the committee. The museum, which was opened on the 7th September, 1870, now contains 500 specimens of animal substances, 2500 specimens of vegetable substances, more than 4500 specimens of rocks and minerals, 350 models of mining and agricultural machinery, and more than 3000 specimens included in the metallurgic, pottery, glass, and building-material collections. Four courses of popular lectures—treating of geology, botany, chemistry, mathematics, astronomy, language, literature, art, and manufactures—have been delivered. These courses were attended by 8154 persons. Systematic class instruction has been given in mathematics, practical geometry, chemistry, mineralogy, and telegraphy. During the present year the classes in mathematics and practical geometry have been attended by 41 students, the classes in chemistry by 37 students, the classes in mineralogy by 16 students, and the classes in telegraphy by 100 students, giving a total for the year of 195 students.

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## ROYAL COMMISSIONERS FOR VICTORIA.

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Sir REDMOND BARRY, Chairman of Commission.

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The Hon. HOWARD SPENSLEY, M.P.

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---

## COMMISSION.

*Victoria, by the Grace of God, of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith, &c., &c., &c.*

To our trusty and well-beloved Sir William Foster Stawell, knight, Chief Justice of our Colony of Victoria; Sir Redmond Barry, knight, one of the Judges of the Supreme Court of our said Colony; the Honourable Charles Gavan Duffy, M.P., Chief Secretary of our said Colony; the Honourable William Mountford Kinsey Vale, Commissioner of Trade and Customs of our said Colony; the Honourable Howard Spensley, M.P., Solicitor-General of our said Colony; the Honourable William Henry Fancourt Mitchell, President of the Legislative Council of our said Colony; the Honourable Sir Francis Murphy, knight; the Honourable Caleb Joshua Jenner, M.L.C.; the Honourable Robert Culbertson Hope, M.L.C.; the Honourable Thomas Howard Fellows, M.P.; the Honourable Samuel Henry Bindon; the Honourable John Thomas Smith, M.P.; James M'Bain, Esquire, M.P.; William Williams, Esquire, M.P.; Joseph Jones, Esquire, M.P.; Count de Castelnau; David Charteris Macarthur,

Esquire; Charles Edward Bright, Esquire; The Rev. John Ignatius Bleasdale, D.D.; William Wilkinson Wardell, Esquire, Inspector-General of Public Works of our said Colony; Samuel Ramsden, Esquire; George Bencraft, Esquire; Paul de Castella, Esquire; Thomas Lambert, Esquire; Hugh Parker, Esquire; Matthew M'Caw, Esquire; and Samuel Sextus Ritchie, Esquire. Greeting.

Whereas it has been announced by our Commissioners for the Exhibition of the year one thousand eight hundred and fifty-one, that the third of the series of Annual International Exhibitions of the Fine Arts and Industry, determined upon by our said Commissioners, will be held in London, in the year of Our Lord one thousand eight hundred and seventy-three. And whereas such Exhibition will consist of three Divisions, namely—(1) Fine Arts; (2) Manufactures, viz.:—Silk and Velvet, Steel, Cutlery, and Edge Tools; (a) Steel Manufactures; (b) Cutlery and Edge Tools, Surgical Instruments and Appliances, Carriages not connected with Rail or Tram Roads, Substances used as Food; (a) Agricultural Products; (b) Drysaltery, Grocery, Preparations of Food; (c) Wines, Spirits, Beer, and other Drinks, and Tobacco; (d) Implements for Drinking and Use of Tobacco, of all kinds; Cooking and its Science; Machinery, for the Group; Raw Materials, used for all the above-mentioned objects; (3) Recent Scientific Inventions and New Discoveries, as set forth in the General Scheme and Rules and Regulations, published by our said Commissioners, and subject to such modifications therein as may from time to time be made and notified. And whereas it is desirable that the Fine Arts, Manufactures, and Recent Scientific Inventions and New Discoveries of our Colony of Victoria should be effectually represented at such Exhibition. Now, know ye, that we, reposing special trust and confidence in your knowledge and ability, have thought fit to constitute and appoint, and by these presents do constitute and appoint you, the said Sir William Foster Stawell, Sir Redmond Barry, Charles Gavan Duffy, William Mountford Kinsey Vale, Howard Spensley, William Henry Fancourt Mitchell, Sir Francis Murphy, Caleb Joshua Jenner, Robert Culbertson Hope, Thomas Howard Fellows, Samuel Henry Bindon, John Thomas Smith, James M'Bain, William Williams, Joseph Jones, Count de Castelnau, David Charteris Macarthur, Charles Edward Bright, John Ignatius Bleasdale, William Wilkinson Wardell, Samuel Ramsden, George Bencraft, Paul de Castella, Thomas Lambert, Hugh Parker, Matthew M'Caw, and Samuel Sextus Ritchie, to be our Commissioners, for the purpose of taking all such measures as may be necessary to ensure the effectual representation of the Arts, Manufactures, Products, Scientific Inventions, and New Discoveries of Victoria at the International Exhibition, to be held in London, in the year of our Lord one thousand eight hundred and seventy-three, as aforesaid. And further, to make such arrangements and provision for the Exhibition in the City of Melbourne, in our said Colony, of such articles as may be collected for the said International Exhibition, prior to their transmission for that purpose; and we do hereby appoint our trusty and well-beloved Sir Redmond Barry to be Chairman of you, our said Commissioners. And we do by

these presents give and grant to you, or to any three or more of you, full power and authority to carry into effect the purposes of this our Commission by all lawful ways and means whatsoever; and we do will and direct that you do report in writing your proceedings from time to time to the Governor of our said Colony. And lastly, we do by these presents ordain that this our Commission shall continue in full force and virtue, and that you, our said Commissioners, or any three or more of you, shall and may from time to time, and at any place or places, proceed in the execution thereof, and of every matter and thing therein contained, although the same be not continued from time to time by adjournment.

Witness our trusty and well-beloved cousin the Right Honourable John Henry Thomas, Viscount Canterbury, &c., &c., &c., this thirtieth day of May, one thousand eight hundred and seventy-two.

(Signed) CANTERBURY.

By His Excellency's command (signed).

Entered on record the thirty-first day of the same month and year. (Signed).

The following gentlemen appointed since the date of Commission :—  
The Hon. Robert Ramsay, M.P.; James B. Patterson, Esq., M.P.; Orlando Fenwick, Esq.; Hon. Sir G. F. Verdon, K.C.M.G., C.B.; Hon. J. O'Shanassy, C.M.G.; T. J. Sumner, Esq.; Emil Thoneman, Esq.; Thomas O'Grady, Esq.









THE  
LONDON INTERNATIONAL EXHIBITION, 1872-3.

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THE VICTORIAN EXHIBITION.

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O F F I C I A L  
CATALOGUE OF EXHIBITS.

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DIVISION I.—FINE ARTS.

COMMITTEE:

Sir W. F. Stawell	Sir Redmond Barry, Chairman.	
Sir Francis Murphy	The Hon. T. H. Fellows	Charles E. Bright, Esq.
The Hon. C. Gavan Duffy	The Hon. S. H. Bindon	W. W. Wardell Esq.
	Sir G. Verdon	

---

SECTION I.—OIL PAINTINGS.

EXPERTS :

The Hon. T. T. A'Beckett	Professor M'Coy	Dr. Fisher
The Hon. C. G. Duffy	Professor Wilson	R. Twentyman, Esq.
	F. E. Sichel, Esq.	

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AUSTRALIAN art is too young to possess a history, and is at present in too fluid a condition to be regarded as exhibiting a distinctive character of its own. It is, as Edmund Burke said of the American people of his day, "but in the gristle, and not yet hardened into the bone of manhood." Its beginnings, however, are not without interest, as we trust its progress will be not without distinction and reward. There was a time when Glover was almost the only representative of the art of painting in these colonies, if we except the convict Wainwright, who was occa-

sionally allowed to exercise his pencil in Hobart Town, at the close of his infamous career. In our own colony, M. Von Guerard was the first to devote to landscape portraiture a mind cultivated by a course of study in the principal galleries of Europe, and a method of looking at Nature shaped and governed by the realistic tendencies of the German school. The purple mountains, far-stretching plains, and amber sunsets of Australia have received a faithful interpretation at his hands; and if this may at times have appeared to be too literal, we must remember that M. Von Guerard's literalness is attributable to what constitutes an estimable quality in any artist—his unswerving fidelity to his own impressions. A young water-colour draughtsman, named Davis, of great promise but unequal performance, gave numerous proofs of genius between 1855 and 1860, but died early, without fulfilling what he was capable of. If the modern school of German art has found a worthy exponent among us in M. Von Guerard, French art has been suitably represented by Mr. William Strutt, who received his training, and formed his style, in one of the best studios in Paris, at a time when Ingres, Flandrin, Delaroche, L. Robert, Gleyre, Delacroix, and their brilliant contemporaries, reflected so much lustre upon the annual exhibitions in the *salon*. In the New Zealand landscapes of Mr. Strutt we find that absence of pretension and simplicity of purpose, and that striving after a certain harmony of tone and unity of impression, which are observable in the best work of the best *paysagistes* of France. It is greatly to be regretted that, for want of adequate encouragement, this modest and gifted artist should have been impelled to transfer his easel from Melbourne to London, where his picture of "Black Thursday" excited general attention and admiration during the year of the International Exhibition. Mr. N. Chevalier next made his mark as a landscape painter. With a fine eye for colour, and almost as great a facility for execution as Luca Fa-presto, this gentleman rarely did justice to his own powers, and sometimes substituted the rapidity of the practised artificer for the patient and long elaboration with which the true artist works out his own idea, preferring the complete expression of this to any emolument to be derived from hasty and immature work. M. Buvelot is another *paysagiste* who stands in the front rank, and who is not unlikely to found a school of landscape artists in these colonies. He looks at Nature with the eye of a poet, and gives a poetical rendering of everything he depicts upon his canvas. In his studies of the woodland scenery of Victoria, he may be said to stand alone. It is scarcely too much to assert he was the first to reveal to us the special picturesqueness, and the wonderful variety of form and colour presented by the commonly-despised trees of Australia, and to show that, whether in isolation or in combination, these ragged and rugged members of the eucalyptus family are no less beautiful than the more symmetrical and umbrageous elm, oak, beech, and birch of the mother country. And so, too, with the dry creeks, the lonely waterholes, the dusty bush tracks, and the clustering saplings of blue gum, which are such familiar features of Australian scenery; they are reproduced by M. Buvelot with such a vivid perception of their artistic charm, that we look at them in Nature thenceforth with a new interest, and discern in





them beauties previously unregarded. In fact, M. Buvelot seems to implicitly obey the advice which M. Courbet once gave to a brother artist—"Mettez vous en face de la Nature, et puis peignez comme vous sentirez—pardieu!"

Another landscape painter of great power, and with a singular capacity for the bold and vivid presentation in water-colours of scenes of grandeur and sublimity, is Mr. Gully. His subjects have all been selected from New Zealand, and he has been fortunate, not only in seizing upon the most imposing features of the magnificent scenery of those islands, but in catching their loveliest aspects, in spite of the transitoriness of the latter. Mr. Gully may be considered as a Victorian artist by adoption, since his genius first found recognition here.

Many other artists, of whose works specimens will be found in the present Exhibition, promise to reveal, with more or less of technical skill and poetic feeling, the abundance of *motifs* which the landscape scenery of Australia supplies for the purposes of pictorial art; and it is interesting to observe that in these colonies, as in the mother country, men exercise their pencils chiefly in that department of art—landscape painting—in which has been the true strength of the British school.

In the practice of photography, our local operators have been so successful, that their best productions are capable of holding their own with the choicest specimens of the photographic art to be met with in Europe. The sun-pictures executed in the Crown Lands Office are admirable illustrations of what may be accomplished by technical skill, with the aid of the best materials, in this lucid atmosphere. Architecture and landscape scenery are felicitously produced by Mr. Nettleton; and personal portraiture in the hands of Batchelder and Co., of Messrs. Johnstone and O'Shannessy, Mr. Mayall, and many others whose names will be found in the list of exhibitors, has reached a degree of excellence which scarcely leaves anything to be desired. The latest discoveries in science, and the most recent improvements in the various stages of the process, are promptly adopted by operators in Melbourne and throughout the colony; and the photographs of public buildings which have been made by order of the various Shire Councils, and other municipal bodies, and which will be found in their proper place, will hereafter possess an historical value, as an authentic record of the precise stage of architectural progress, if not of social growth, reached at the period of holding the present Exhibition.

---

ADAMS, R. T., Sandridge-road.

Portrait of "Fisherman"

BROUNKIE, E., Melbourne.

Portraits in Oils (painted by T. F. Flintoff).

1. "The Emperor of Germany"

2 "The Prince Imperial"



BUVELOT, LOUIS, 88 Latrobe-street East.

- 3 "Yarra Flats and Mountains," taken from View Hill, on the road to Wood's Point

CAMPBELL, O. R., Windsor.

- 4 "Laban's Daughters"

COOK, E. W., 41 Collins-street East.

- 5 "View on the Waiau River, near Lake Manipori, New Zealand"

CURTIS, J. W.

- 6 "In the Plenty Ranges : Twilight"  
7 "In the Plenty Ranges : Morning"  
8 "On Jackson's Creek, Sunbury"  
9 "On Jackson's Creek, near Keilor"

DEASE, E. F., Latrobe, Tasmania.

- 9A "The Gamekeeper's Companion"  
9B "St. Francis"

EARLES, CHESTER, South Yarra.

- 10 "Bianca"  
11 "Katherina"

FULLER, S. P., St. Kilda.

- 12 "The Sisters, Ferntree Gully"

HANAN, R. H., 245 Swanston-street.

- 13 Armorial Bearings of His Excellency Sir Henry Barkly  
14 Ornament from a MS. formerly in the Vatican

HUNT, WM., 224 Victoria-parade.

- 16 "The Parting of the Betrothed"

KEMP, JOHN, 85 Collins-street East.

- 17 "The Right Worshipful the Mayor of Melbourne"  
18 "Bust Portrait of a Gentleman"

M'COMAS, J. W., 49 King-street.

- 19 "The Madonna"

M'GOWAN, S. W., Hotham-street, East St. Kilda.

- 20 "View on the Hudson River"  
21 "Watergate Bay"  
22 "Ullswater"

NATIONAL GALLERY OF VICTORIA, per EUGENE VON GUERARD  
Master in Painting.

Seventeen Exhibits of Copies of Paintings in National Gallery,  
by Students.

- 23 "Palm Sunday," Edith Courtauld—Miss M. Bullen  
24 "Solitude," Webb, Miss M. Bullen  
25 "Ostend Pier," E. C. Chambers—Miss Black  
26 "Norwegian Landscape," unknown (water colours)—Miss H  
Chambers





- 27 "Italian Landscape," unknown—Miss H. Chambers
- 28 "Garden of an Italian Monastery," unknown—Miss H. Chambers
- 29 "Italian Forest Scene," unknown—Miss H. Chambers
- 30 "St. Giles and St. James," T. Earl—Miss Coates
- 31 "The First Snow," Otto Weber—Mr. Cutter
- 32 "Sheep in Repose," Tschaggeny—Mr. Cutter
- 33 "Wild Flowers of Australia," original—Mr. Cutter
- 34 "Wet Sunday," O'Neill—Miss Gaggin
- 35 "Moonlight," Gilbert                     "
- 36 "Moonlight," unknown                     "
- 37 "Ship on Fire," Danby                     "
- 38 "The First of the Season," Steele, R.S.A.—Mrs. Haydon
- 39 "Jailer's Head" (from Bunyan), Folingsby                     "
- 40 "Depart du Fiancé," Köller—Mrs. Hunt
- 41 "Horses and Pigs," Herring—Mr. W. W. Hoare
- 42 "A Fruit Piece," Hughes                     "
- 43 "Ostend Pier," G. C. Chambers—Miss Lempriere
- 44 "Harvest Waggon," Linnel                     "
- 45 "Landscape," Leader                     "
- 46 "Sheep in Repose," Tschaggeny—Mrs. Lempriere
- 47 "La Belle Yseult," Bedford                     "
- 48 "Arab Prisoners," J. E. Hodgson—Mr. F. G. O'Neill
- 49 "Landscape in Botanic Gardens," original—Miss Pritchard
- 50 "Sketch from Nature"                     "                     "
- 51 "Sketch from Photograph"                     "                     "
- 52 "Winter Morning," Buvelôt                     "
- 53 "Summer Afternoon"                     "                     "
- 54 "Druidical Monuments," G. Herring—Miss Smyth
- 55 "Three Portraits in Chalk," original—Mr. Sutherland
- 57 "Portrait of a Lady," original—Miss Scott
- 58 "Portrait of a Gentleman," original                     "
- 59 "The Ferngatherer," Herdman, R.S.A. (in water colours)—Mrs.  
Testar
- 60 "Rachel at the Well," Goodall, R.A.—Mrs. Testar
- 61 "Bunyan in Prison," Folingsby—Mr. Usher
- 62 "Playing Grandmother," Kate Grey                     "
- 63 "Portrait of a Gentleman," original—Mr. John White
- 64 "Landscape—(Crayfishing)"                     "                     "
- 65 "Riddell's Creek"                     "                     "

PEDRONCINI, PIETRO, South Richmond.

- 66 "The Triumph of Spring and Flora," in distemper
- 67 "The Wife of Uriah at the Baths"

PRICE, F., 2 George-street, Fitzroy.

- 68 "Out of the Kitchen Windows"

RASCHE, WM., 62 Collins-street East.

- 70 "Hagar and Ishmael"

- 71 "Fisherwoman"  
72 "Gipsies"

RIELLY, HENRY, Windsor.

- 73 "Cattle in Repose"  
74 "Teatree Swamp, on the Bank of the Yarra"

SAWERS, R. W., Fitzroy.

- 75 "View of Mount Macedon"

STERNE, C. H., 22 Collins-street West.

- 76 "Upper Yarra, near Lilydale," by Thos. Clarke  
77 "The Wannon Falls, near Hamilton" "  
78 "Plains of Waterloo" "  
79 "The South Esk," Tasmania "

STEVENSON, THOS., West Melbourne.

- 80 "Specimens of Heraldic Painting"—His Excellency's as a K.C.J.  
empaling Lady Canterbury's. An Earl's Coat of Arms, a Baron  
Coat of Arms

TAYLOR, ENOCH, East Melbourne.

- 81 "Rob Roy McGregor's Birthplace," by H. C. Woollett  
82 "Woodland Lane Letter Box"  
83 "Scotch Scenery"  
84 "Mob of Cattle"  
85 "Mob of Horses"  
86 "Scotch Scenery"

WALTON, ELIJAH, Geelong.

- 87 "Trial by Jury," by Exhibitor  
88 "The Young Archer," by Exhibitor

WHITEHEAD, ISAAC, 87 Collins-street East.

- 89 "Mount Macedon : After Rain"  
90 "Buffalo Ranges"  
91 "Grampians : Early Morning"

WILLDER, DERBIN, 22 Collins-street West.

- 92 "The Last Effort," by Thos. Clarke  
93 "Sheep Washing," by Glover  
94 "The Needles, Isle of Wight," by Thos. Clarke  
95 "The Red Bluff by Moonlight"  
96 "The Smuggler's Cave," by H. Gritten  
97 "Coast Scenery"

WRIGHT, THOS., 51 Bourke-street East.

- 100 "View on the Upper Yarra"











## WATER-COLOUR DRAWINGS, &amp;c.,

BAGOT, R. C., 102 Bourke-street West.

- 101 "New Grand Stand, Melbourne Racecourse," perspective drawing

BEAM, MRS. HARRIET, 200 Hoddle-street.

- 101A Three Pictures : Groups of Flowers

BOWMAN, J. S., 42 Russell-street.

- 102 "View on Merri Creek" (in crayons), by Frederick Straw  
 103 "Ford on the Upper Yarra" (in crayons), by J. S. Bowman  
 104 "A Quiet Pool on the Upper Yarra" (in crayons), "  
 105 "Mount Kosciuszko, in the Alps" " "  
 106 "Falls on the Crackenback River" " "  
 107 "Portrait of Mr. J. S. Bowman" " "  
 108 "View from Malvern Hill," by Miss Andrew  
 109 "View from St. Kilda," by Miss Watson  
 110 "View on the Yarra," by Miss Harris  
 111 "Sketch on the Yarra" (vignette), by Miss Z. J. Bowman  
 112 "A Victorian Township"—(School Dismissed) "  
 113 "Gippsland Plains"—(View from the Hill Head) "  
 114 Case of Victorian Crayons, made principally from Victorian Earths  
 and Clays

CAMPBELL, M. A., Windsor.

- 115 "Northern Spur of Dandenong Ranges," by M. A. Campbell

CARTER, J., Rathdowne-street, Carlton.

- 116 A Panel in Pencil  
 117 A Panel with Victorian Birds, for decoration  
 118 A Design for Paper  
 119 Fruit, in water colour

CASTIEAU, J. B., Governor of Melbourne Gaol.

- 120 Frith's "Derby Day," pen and ink copy  
 121 " " "Railway Station" "

CLARSON, W. A., 72 Little Collins-street East.

- 122 "Eastern End of Dandenong Ranges"

CURTIS, J. W., 3 Bourke-street East.

- 123 "View from Summit of Mount Disappointment," by J. W. Curtis  
 124 "A Sultry Morning near Nunawading" "  
 125 "Dry Creek at Sunbury" "  
 126 "Paddock at Mulgrave" "

DRAPE, D. R., Chapman-street, Hotham.

- 127 "A 'First-Rate' taking in Stores," from a woodcut after J. M. W. Turner

GAINE, MRS. E., St. Kilda.

- 128 Native Flowers

## GRAY, MRS. ELIZABETH, Wickliffe.

- 129 Pen and Ink Drawing of Aboriginal  
 130 " " "  
 131 Water-Colour Drawing of Coast Scenery  
 132 " " Sheep Station, near Portland  
 133 Swan Egg, with Colonial Scenery  
 134 Sundry Vases, with Drawings

## HAMILTON, ANDREW, Warrnambool.

- 135 "View of Belfast or Port Fairy, from Armstrong's Bay"  
 136 "Sunset from Killarney, Tower Hill, looking west." This sunset  
 immediately preceded the snow-storm of August, 1872  
 137 "Snow Scene from Mulrenny, seat of late G. McArthur, Esq., Mount  
 Rouse in the distance, August, 1872"

## HOARE, W. W., Fitzroy.

- 15 Copy of Herring's "Horses"

## PARSONS, GEORGE, 23 Stephen-street.

- 138 "View at Schnapper Point"  
 139 "The Wreck of the 'Sussex'"  
 140 "View at Geelong"

## RUSSELL, M. R., Victoria-parade.

- 140A Melbourne, from the Falls

## RYAN, MISS ELLIS, Richmond.

- 140B Victorian Wild Flowers, on two frames and eight sheets

## RICHARDSON, J. T., 3 Collins-street West.

- 141 "Rocks near Cape Otway"

## SMITH, GEORGE, Lonsdale-street, Hamilton.

- 142 "Old Grange, Burrford, and Remains of first Public House in  
 Hamilton"  
 143 "Residence of Mr. W. Laidlaw"  
 144 "The Banyan Tree, Virgoola, Bombay," original pencil drawing

## STAPLES, J. J. H., Essendon.

- 145 "The Wellhorn" (copy)  
 146 "Group of Butterflies"

## WRIGHT, THOMAS, 52 Bourke-street.

- 147 "Scene at Kilmore"

## SECTION II.—PHOTOGRAPHY.

## EXPERTS:

F. Wilkinson, Esq.  
 E. Kligender, Esq.

H. J. Chambers, Esq.  
 J. Noone, Esq.

## ARARAT SHIRE COUNCIL.

- 148 Photographs of Local Subjects





## BANNOCKBURN SHIRE.

- 149 Photographs and Statistics

BARDWELL, WILLIAM, Ballarat.

- 150 Large Panorama of Ballarat

- 151 Heads of the People

- 152 Eight large Photographs, portraiture size

BARRABOOL SHIRE COUNCIL.

- 153 Twelve Local Views, together with Statistics

BRIGHTON BOROUGH COUNCIL.

- 154 Photographic Views and Statistics of the Borough

CHILWELL BOROUGH COUNCIL.

- 155 Photography and Statistics of Borough of Newtown and Chilwell

CHUCK, THOMAS, 19 Royal Arcade.

- 156 Photograph of the Chief Justice, Sir W. F. Stawell, finished in oils

- 157 " Sir Redmond Barry, finished in water colors

- 158 " Mr. Justice Williams, finished in water colors

- 159 " The Dean of Melbourne, finished in mezzo-tint

- 160 Untouched Solar Enlargement

- 161 Case of Photographs, plain

- 162 " coloured

CORNELL, F., Beechworth.

- 162A Photographs

CRESWICK BOROUGH COUNCIL.

- 163 Photographs and Statistics, framed

DAREBIN SHIRE COUNCIL.

- 163A Photographic Views

DAWSON, PATRICK, Hamilton.

- 164 Photographic Portrait (life size), absolutely untouched, printed by the solar camera by development on silver salt.

EAGLEHAWK BOROUGH COUNCIL, Eaglehawk, Sandhurst.

- 165 French-polished Cedar and Gilt Frame, enclosing a set of Photographs (20) of Buildings, Mining Works, &c., and Statistics of the Borough

ECHUCA BOROUGH COUNCIL.

- 166 Frame of Photographic Views

EMERALD HILL SHIRE COUNCIL.

- 166A Photographic Views

FOX &amp; OAKDEN, Ballarat.

- 167 Architectural Photographs and Drawings

GEELONG, BOROUGH COUNCIL OF, Geelong.

- 168 Photographic Views of Geelong and District

- 168A " "

GIBSON, A. M., Wangaratta.

- 168B Photograph of Buildings at Wangaratta

HALL, WILLIAM, 45 Victoria-parade.

- 169 Four Frames, with Photographs

HARRIS, E. S., Beechworth.

- 170 Eight Photographs, Views of Beechworth

HEIDELBERG SHIRE COUNCIL.

- 171 Views and Statistics of Shire

HILL & CO., 55 Bourke-street.

- 172 Photographs

HUNTLY SHIRE COUNCIL.

- 172B Photographic Views

INTERNATIONAL EXHIBITION, Commissioners of.

- 173 Portraits of Aborigines

JOHNSTONE, O'SHANNESSEY & CO., 3 Bourke-street East.

- 174 Specimens of highly-wrought Artistic Photography

MARONG SHIRE COUNCIL.

- 175 Photographs and Statistics

MAYALL, J. P., 55 & 57 Collins-street East.

- 176 Portrait of Geo. Coppin, Esq.

- 177 " The Hon. J. G. Francis, M.L.A.

- 178 " Signor Coy

- 179 " Signora Coy

- 180 Signor and Signora Coy, three-quarter size, finished in mezzo-tint

- 181 Group of Prince and Princess of Wales, in Wedding Dress

- 182 Two Frames containing 80 Cartes-de-Visite

- 183 A Series of Eight Enlargements from Carte Size

- 184 Life-size Photograph of the Hon. C. G. Duffy

- 185 " " M. O'Grady

- 186 " " P. Hanna, Esq.

- 187 " " John Matheson, Esq.

- 188 Two Female Heads

PHOTOGRAPHIC COMPANY, ROYAL, Portland.

- 190 Photographs, &c.

- 191 One large Cameo

M'DONALD, DONALD, 89 High-street, St. Kilda.

- 192 Two Albums of Australian Photographs

MOUNT FRANKLIN SHIRE COUNCIL.

- 193 Views of Scenery in the Shire

NOONE, JOHN, Crown Lands' Office.

- 195 Series of Twelve Photographs of Melbourne











## ODDIE, JAMES, Ballarat.

- 196 Photograph of Freehold Bank

## OXLEY SHIRE COUNCIL.

- 197 Photographic Views

## PUBLIC LIBRARY, Trustees of.

- 198 Photographed Copies (two) of the Dresden Gallery, photographed by Mr. Noone, of the Land and Works, Photographer to Public Library

## RICHMOND TOWN COUNCIL.

- 199 Photographic Views

## ROBERTS, W. J., 164 Bourke-street East.

- 200 Photographic Works

## SALE, BOROUGH COUNCIL OF, Gipps Land.

- 201 Photographic Views of Sale and neighbourhood

## ST. ARNAUD BOROUGH COUNCIL.

- 202 Series of Photographic Views

## STAWELL BOROUGH COUNCIL.

- 203 Photographic Views of Public Buildings, &c.

## TARNAGULLA BOROUGH COUNCIL.

- 204 Photographs of Public Buildings

## TRUSTEES OF THE INDUSTRIAL AND TECHNOLOGICAL MUSEUM.

- 205 Three Photographs taken on the Launceston and Western Railway, Tasmania

## WALHALLA COMPANY, North Gipps Land.

- 206 Photographs of Auriferous Mineralogical Specimens from the Walhalla Company's Mine, North Gipps Land

## WINCHELSEA SHIRE COUNCIL.

- 207 Photographs of Public and Private Buildings and Scenery in Shire of Winchelsea

## MISCELLANEOUS.

## EXPERTS:

Colonel Ward, R.E.  
W. W. Wardell, Esq.A. F. Tulk, Esq.  
J. Reed, Esq.L. Terry, Esq.  
Capt. Stubbs.

THE miscellaneous division in Fine Arts will be found to contain something of everything, from a book-marker, the work of a prisoner at Pentridge, to specimens of the latest discoveries in art and science. A few sculpture exhibits are included, and most of the models sent in.

to the Commissioners have found a place under the same general heading. In a country so young as the colony of Victoria it cannot be expected that the fine arts should have made very great progress, and it is creditable that so many exhibitors have come forward with their multifarious collection. The Commissioners have done well in not discouraging young students in fine arts, as many very mediocre exhibits have been admitted, and those of us who have seen art collections of a higher degree of merit must bear in mind that the present exhibition is of colonial productions only, and that the bulk of artists are of necessity quite beginners at their studies. Sculpture does not seem as yet to have many students, the chisel has not become so popular as the artist's pencil; but there is plenty of time yet for the growth of sculpture, and who knows but that ere long we may have amongst us as many sculptors, and of as high an order of merit, as we now have of painters both in oil and in water-colours.

No doubt the collection of fine arts will attract the most general attention, inasmuch as the greater part will be easily understood; they form indeed the attractive portion of the exhibition. Cases of stuffed birds, collections of native animals, tapestry, fancy work of every kind, these cannot fail to interest the general observer. Various specimens of fancy printing will be found—printing in various colours—as also specimens of electrotyping and stereotyping, lithography, and graphotyping. A collection of violins and violoncellos, copied from instruments of the highest class, will interest not a few; whilst all visitors will be attracted by the stained glass windows, and the ornamental glass gilding generally. Many are the exhibits of fancy work, work in feathers, wax, wool, leather, &c.; and some interesting collections of sea-weed and ferns have found their way to the Exhibition. Unless one went through the catalogue, item by item, it would be impossible in a general sketch to convey to the reader the variety and extent of exhibits which have been classed under the general heading of miscellaneous fine arts.

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ALTMANN, E. A., 145 Punt-road, Richmond.

208 Specimen of Engraving on Copper

ADAMS, R. T., Sandridge-road.

208A Copies of *Morning Post* and *Daily Advertiser*, January 17, 1785

APPERLY, HENRY, Brunswick-street, Fitzroy.

209 Statue representing Visit of Hope to Sydney Cove, 1789

209A „ „ one of the Seasons—"Summer"

BATES, —

209B Model of a Boat

BELLARINE SHIRE COUNCIL.

210 Statutes, &c., of the Shire

BENCRAFT, GEORGE, Flinders-lane West.

211 Case containing Opossum, with Bush Sketches in oils on gum leaves, painted by Mr. Eustace, a shepherd near Albury





BLACK, MRS. HELEN, Ballarat.

- 212 Vase of Skeleton Leaves, in glass shade

BOYD, CHARLES, Ballarat.

- 213 Specimen Book of Letter-press Printing

BRIDGES, WILLIAM, Ballarat.

- 214 Tapestry representing Christ Crowned with Thorns

BYERS, MARGARET, 66 Urquhart-street, Ballarat.

- 215 Needlework, Queen Esther Pleading for the Jews

CALVERT, SAMUEL, Little Collins-street East, Melbourne.

- 216 Press Proofs of Engravings on Wood, being Portraits, Views, Buildings, &c., &c., printed in black, tint, and colored inks

CHANDLER, EDWARD, 213 Clarendon-street, Emerald Hill.

- 217 Dulcimer, of colonial manufacture

CLELAND, MRS., 79 Stephen-street.

- 218 Frame of Fancy-carved Woodwork, representing Our Saviour with the Crown of Thorns, and the Four Apostles

CORIO SHIRE COUNCIL.

- 219 Shire Seal and Statistics

DAREBIN SHIRE COUNCIL.

- 219A Statistics of the Shire of Darebin

DAVIS, MARTHA, Portland.

- 220 Group of Flowers carved from the Shell of the Cuttlefish, in case of leatherwork

DEVEREUX, JOHN, 15 Marion-street, Fitzroy.

- 221 Violin, copy of broad pattern, by Joseph Guarnerius

- 222 „ „ Straduarus

- 223 „ „ Joseph Guarnerius, oil varnished

- 224 Viola, copy of Straduarus

- 225 Violin, copy of Guarnerius, broad pattern, varnish prepared from colonial gums

- 226 Violoncello, copied from an old Italian master

The whole of these are fitted with the improved tension bar and patent pegs, to prevent slipping, patented by the exhibitor.

EARLES, CHESTER, South Yarra.

- 227 Portrait Medallion, by J. S. Mackennal

EMERALD HILL TOWN COUNCIL.

- 228 Model of Bridge (swing, crossing Yarra at Spencer-street), made by Mr. Angus, of Emerald Hill

FERGUSON, URIE, & LYON, Curzon-street, North Melbourne.

- 229 Stained Glass and Drawings



- 230 Stained Glass and Drawings  
 231 " "  
 232 " "  
 233 " "  
 234 " "  
 GAMBLE, MRS. W. M., Charles-street, Prahran.  
 235 Wax Flowers, under glass shades  
 GAINÉ, Mrs. E., St. Kilda.  
 236 Cushion, worked in Wool  
 GARDNER, J. R., Albion Hotel, Melbourne.  
 237 Two Model Yachts: a Cutter and a Schooner  
 GAMON, THOMAS, 38 Queen-street.  
 238 Artificial Flowers and Vases carved from the bone of the Cattle  
 fish, and Seaweed Pictures  
 GASKELL, JOSEPH, 118 Elizabeth-street.  
 239 Wax Flowers  
 GAUNT, THOMAS, 14 Bourke-street East.  
 240 Large Railway Clock, colonial-made, by exhibitor  
 241 Marble Clock  
 242 Carriage Clock  
 243 Gold Watch  
 244 Large case of Silver Plate  
 245 " " Electro-plate  
 246 Collection of Spectacles  
 GLEN, W. H., 33 Collins-street East.  
 247 One folio Music  
 GRAHAM, JAMES, 95 Swanston-street.  
 248 Glass Case containing Wigs, Scalps, and Ornamental Hair-work  
 HENTY, Mrs. RICHMOND, South Yarra.  
 249 Three Pen and Ink Drawings  
 HALLEY, J. J., Williamstown.  
 250 Book on Parrots of Australia, illustrated by chromo-lithographs  
 HART, MARGARET, 73 Gore-street, Fitzroy.  
 250A Two Leather-work Frames  
 HEATH, RICHARD, M.D., Brighton.  
 251 Picture composed of Seaweeds collected outside Barwon Heads  
 HOGARTH, JULIUS, Wangaratta-street, Richmond.  
 252 Two small Modelled Figures, and Impressions of Dies  
 HUDSPETH, T. H., Portland.  
 253 Marine Picture, made of Seaweed and Flowers, carved out of Cattle  
 fish, in leatherwork frame





- 254 Seaweed and Cuttlefish found on Portland Beach  
 255 Leather-work, the produce of the Western District

HUNTER, WILLIAM, 67 Greeves-street, Fitzroy.

- 256 Model of Mansion, composed and ornamented with seashells

INDO-AUSTRALIAN STUD-FARM AND HORSE-DEPOT  
 COMPANY.

- 257 Scrip of Company, with Portrait of His Excellency Sir Salar Jung,  
 Ruler of the Great Deccan, India

INSPECTOR-GENERAL OF PENAL ESTABLISHMENTS,

- 258 Three Bone Rings  
 259 Two Bone Book-markers

INTERNATIONAL EXHIBITION, Commissioners of

- 260 Busts of Aborigines

JENKINS, JOSEPH, 91 Flinders-street East.

- 261 Two Florentine Bronzed Tables

KELLY, T. A., 100 Elizabeth-street.

- 262 Architectural Design—Perspective View of Proposed College at  
 Kew

KEMP, MRS., Melbourne.

- 262A Seaweed Flowers, in frame

LANDESHUT, S. J., 73 Lonsdale-street West.

- 263 Book of Esther, written in Hebrew, on a parchment Scroll, in ivory  
 case, written at Jerusalem, in 1842

LEWELLYN, MRS., Prahran.

- 264 Skeleton Flowers (two cases)

LEE & RICHARDSON, 3 Collins-street West.

- 265 Wood Engravings.

MANSFIELD SHIRE COUNCIL.

- 266 Statistical Information of the Shire of Mansfield.

MACKENNAL, J. S., 105 Collins-street East.

- 267 Ideal Bust (life size), entitled "Pleasing Thought," with pedestal  
 to same

- 268 "Startled Horses" (a panel in high relief). Group of Horses' Heads,  
 and a bracket; Italian

M'LEAN, JOHN, West Melbourne.

- 269 Picture in Needlework—"John Anderson, my Joe"

MARCHAND, AIME, Portland.

- 270 Case containing Leather-work

- 271 Two Silk Banners

- 272 Two little Pyramids  
 273 Three Seals  
       **MASSINA, A. H., 72 Little Collins-street East.**  
 274 Specimens of Printing from Blocks in Colors  
       **MASON & CARR, 67 Collins-street East.**  
 275 Model of Quartz Crushing Machine, made of silver, with specimen  
       of quartz and gold, worked by magnets, the property of th  
       late Mr. Joseph Millin, of Sandhurst.  
       **MAXWELL & PHILLIPS, 74 Chancery-lane.**  
 276 Map of Melbourne and Suburbs, coloured, and mounted o  
       rollers  
       **MITCHELL BROS., Lygon-street, Carlton.**  
 277 One 9-inch Plaster Truss, complete  
 278 One quarter-section of a 32-inch Centre Flower  
 279     "                 "                 36-inch                 "  
       **MOORE, JAS., 177 Smith-street, Fitzroy.**  
 280 Dissolving Views on Stand  
       **MONSTER CLOTHING COMPANY, 21 Bourke-street East.**  
 281 Model of a Cloth-Shrinking Machine  
       **MURRAY, H. K., Ballarat.**  
 282 Model of Yacht  
       **NICHOLLS, ALFRED, Hotham.**  
 283 Elementary Block Maps, for use of Schools  
       **NIVEN, FRANCIS W., Ballarat.**  
 284 Engraved Map of Ballarat, mounted and varnished  
 285 Framed View of City Hall, Ballarat, lithographed in colours b  
       F. W. Niven  
 286 Mining Share Register Book  
       **PAYNE, H. A., 145 Clarendon-street, Emerald Hill.**  
 287 Hand copy piece of Music, "Auber Quadrille"  
       **PRIEST, ALFRED, Coleraine.**  
 288 Stone Sculpture, representing blackfellow spearing a kangaroo  
 288A     "                 "                 Bonaparte at Waterloo, 18th June  
       1815  
       **PRICE, FREDERICK, 59 Swanston-street.**  
 289 Specimen of Copperplate and Lithographic Printing  
       **RASCHE, WM., 62 Collins-street.**  
 290 Architectural Design  
 290A Engineering Design  
       **REED, MRS. C. C., Portland.**  
 291 Case of Wool Flowers  
 292 Leatherwork Frame, with Cuttlefish Flowers  
 293     "                 "                 Photographed Portrait of Her Majesty





- RIELLY, ISABEL, Eastbourne-street, Windsor.
- 294 Cultivated and Wild Flowers, manufactured of Paper by Exhibitor
- ROESZLER, C. J., 41 Swanston-street.
- 295 Bookbinder's Blocks and Tools, Die Sinking, and general Engraving
- ROPER, EDWARD, 19 Little Collins-street West.
- 296 Collection of Materials, &c., exemplifying the Art of Graphotype Engraving
- ROPER, MRS. EDWARD, 138 Church-street, Richmond.
- 297 Ornamental Wood, formed of Cones, Seeds, and of Australian Trees and Plants
- RUSSELL, ROBERT, 141 Victoria-parade.
- 298 Etchings on Glass, printed by means of Light
- SCOTT, ROSAMOND, Royal Nurseries, Hawthorn.
- 299 Fancy Table, ornamented with fern work
- SIMMONDS, JOHN, 261 Swanston-street.
- 302 Monumental Cross, in Victorian Granite, polished by steam power
- SINCLAIR, MRS. E., Fitzroy Gardens.
- 303 Book of Ferns, collected from Australia, New Zealand, &c.
- SINCLAIR, C. F., 132 Clarendon-street.
- 304 Two Lead Pencil Drawings
- SMITH, L. L., 182 Collins-street East.
- 305 Model of Prince's Bridge, as decorated on visit of H.R.H. the Duke of Edinburgh
- STANWAY, WM., Park-street, South Yarra.
- 306 Model of an Invalid Chair, used by chief Hospitals in Victoria
- STAFF, HESTER.
- 307 Four cases Imitation Flowers, in Wax and Paper
- STEPHENS, COLONEL, Melbourne.
- 307A Model in Soapstone of the Taj Mahal, at Agra, India.
- STRODE, THOMAS, Richmond.
- 308 The first Medal made in the Colony, 1841
- STURTEVANT, BUXTON, Carlton.
- 309 Bronze Bust of Rev. A. M. Henderson
- TAEGETOW, F., 15 Osborne-street, Williamstown.
- 310 Designs for Decorative Manufacture; View of Hobson's Bay, designed for label for bottles, for Hobson's Bay Brewery, Williamstown
- TAYLOR, EDWARD, Smith-street, Collingwood.
- 310A Model of Machine for Washing Coal-Slack



TRUSTEES OF THE INDUSTRIAL AND TECHNOLOGIC  
MUSEUM.

- 311 Four Paintings on Porcelain—"Madonna of Murillo"  
312 " " Raphael"  
313 "Flora of Titian"  
314 "Judith of Riedel"

THOMSON, WILLIAM, South Yarra.

- 315 Model of a Ship.

TROEDEL, CHARLES, 43 Collins-street East.

- 316 Specimens of Lithography

TRUSTEES OF PUBLIC LIBRARY.

- 316A Catalogue (2 vols) of Public Library  
316B Catalogue (2 vols) of Museum of Art  
317 Picture Frames—Mouldings  
318 " and Ornaments, by J. Whitehead

TWENTYMAN, J. O., 81½ Collins-street East.

- 319 Impressions from Seal Engraving, Heraldic Die Sinking, a  
Heraldic Painting

VIBERT, HELIER, 53 Johnston-street, Fitzroy.

- 320 Model of Church

VICTORIAN RAILWAY DEPARTMENT.

- 321 Detail Drawings from the Department

WALKER, HARRY, Northcote.

- 322 Drawing of a Cathedral Church

WHITEHEAD, J., Collins-street East.

- 323 Specimen of Mouldings, made by exhibitor.

WHITELAW, THOS., Ballarat.

- 324 Imitation of Marble, two specimens  
325 Specimens of Glass Gilding

WILKINSON, A. J., 30 Raglan-street, Emerald Hill.

- 326 Model of Villa Residence

WITHELL, MARY, Raglan-street, Ballarat.

- 327 Case of Feather Flowers, made from feathers of native wi  
flowers  
328 Case of Waxflowers (native)  
329 Vase of Waxflowers (cultivated)

WALKER, MAY & CO., 99 Bourke-street West.

- 330 Electrotyping and Stereotyping

"WANGARATTA DISPATCH."

- 331 Copy of paper printed on blue silk





WYATT, FREDERICK, 62 Collins-street East.

- 332 Design for a Reredos, to be carved in stone and decorated with marbles as jewels, shafts of all the columns to be in Cornish or Derbyshire marbles, the five subjects in the bays to be carved *basso relievo* in alabaster or white marble, the lower niches containing the twelve apostles to be painted in enamel colours and gold or porcelain. The upper shelf in marble, and the lower in freestone or white marble to form re-table. This can be executed in oak, and the whole of the subject rendered in enamel painting.

## DIVISION II.—MANUFACTURES.

### SECTION I.—SILK AND CLOTHING.

#### SECTIONAL COMMITTEE:

O. Fenwick, Esq., Chairman

The Hon. Robert Ramsay | Paul de Castella, Esq.

#### EXPERTS:

M. L. King, Esq.

S. Wallworth, Esq.

R. Bickerton, Esq.

R. G. Brien, Esq.

At some future day Victoria will undoubtedly be a large silk-producing country. Her geographical position, her meteorological peculiarities, and her large consumption of imported silks, all point in that direction. She will not much longer consent to send out nearly £200,000 a year for the purchase of silks and silk manufactures, which could be produced and manufactured here, with care and attention, at a profit. The white mulberry (*Morus alba*), the best and richest known aliment for the silk-worm, grows luxuriantly in Victoria, and the true silk-worm (*Bombyx morus*) thrives amazingly. Full-grown mulberry trees may be seen at the Botanical Gardens, in the Royal Park, at Sunbury, and in various other places; and the names of the successful breeders of the silk-worm in different parts of the colony are so numerous as to make quite a formidable list. The samples of Victorian silk in cocoon and hanks, now on view at the Exhibition, show what a splendid article can be produced here. They cannot be surpassed in fineness and firmness of texture by silk produced in any part of the world. Few attempts have, however, yet been made at the manufacture of colonially-produced silk in Victoria, beyond winding it off the cocoons and gathering it in hanks. Attention has rather been directed for the present to the conversion of imported silks into articles of clothing, an occupation which finds employment for a large number of hands, principally females, at remunerative rates. For how large a number cannot be ascertained with any precision, owing to their not being employed at this work all the year round, and to their being spread over so many establishments, large and small. When the tariff was last altered, a duty of 10 per cent. was imposed on silk goods imported in the piece,

and 20 per cent. on all made up into articles of clothing. This gave a great impetus to that branch of the silk trade, which consists in the making up of mantles, costumes, and other silk and velvet goods, and the hands employed in that way are consequently more numerous than they formerly were. They probably amount to between 300 and 400—some of the manufacturers say to more than double that number—against the 3500 known to be employed in the general clothing trade. The latter is, of course, the trade for the million; the former for the upper ten thousand, for the most part; and any discrepancy between the two estimates as to the number of hands employed in the silk trade arises from many of them being sometimes employed in that and sometimes in the general clothing trade. Few of the large soft-goods houses in Melbourne import ready-made silk goods now; none, indeed, except when they can be bought on such advantageous terms at home as to admit of a profit after payment of the higher rate of duty on manufactured silk goods. They all either get them made up from the piece on their own premises, or, whenever that is inconvenient, they employ contractors to do this for them. Some of the contractors confine themselves to a particular house; others make up goods for whoever chooses to employ them, either in the silk or in the general clothing trade. It would be invidious to single out one or more from the rest, and assign a particular amount of work to each; but if the large houses for whom goods are made up, either on the premises or by contractors outside, be assumed at ten, and the hands employed exclusively at silk work on behalf of each for three months of the year be assumed at twenty-five, a very good estimate may be formed of the number of garments they would produce. Twenty-five hands would turn out ten garments each per week, which would make two hundred and fifty per week for the whole, or three thousand for the three months, and this multiplied by ten—the number of the houses—would give thirty thousand as the aggregate. Nor would that, probably, be very far from the actual result. If not an under estimate, it is certainly not an exaggerated one. But this applies to the large soft-goods houses in Melbourne only, and to the silk goods, either made up by themselves, or by the contractors in their employ. No thoroughly reliable estimate can be formed of the number of hands employed by the wholesale and retail drapers in Melbourne, on the goldfields, and in other country towns, or of the quantity of silk goods they get made up in the course of the year. At one of the wholesale and retail drapery establishments in Melbourne, not fewer than seventy hands are employed in making up silk and velvet mantles on the premises all the year round. This is exclusive of silk dresses and other descriptions of work, some of which is done out of doors. Other wholesale and retail drapers' establishments in Melbourne also employ a large number of hands entirely on silk work, but not so many as the one before referred to. Almost the only silk goods not now made up in Melbourne are infants' hats and hoods, and artificial flowers. These are still imported, for the most part ready-made. That is attributed partly to the want of skilled labour for that description of work in the colony, and partly to ribbons and silks, specially suited for the purpose, not being kept here. On the goldfields, and in all the country towns, the principal drapers keep





their own mantle-makers and milliners, to whom they give constant employment, either on the premises, or out of doors, and the same system is pursued in the outskirts of Melbourne, and in its suburbs. To such an extent, indeed, is this carried throughout the colony, that it may be safely affirmed that the wholesale and retail drapers in Melbourne and the country districts make up far more silk goods from the piece, than are made up for the whole of the large soft-goods houses. The quantity must, therefore, be prodigious. The mantle-maker and the milliner are abroad everywhere. There is also a large consumption of silk in Melbourne in the manufacture of hats, quite equal to the best imported hats in quality, and far below them in price. So much so, that when the present stock of imported hats is exhausted, no more will be brought out, and their place will be supplied altogether by the colonially-made article. Some fine specimens of these are now on view at the Exhibition. A large quantity of the silk goods made up in Melbourne, mantles and coats in particular, are sent to the other colonies, to South Australia, New South Wales, Tasmania, and New Zealand, where there is a great and growing demand for them. Melbourne goods are better liked there than those imported from England; they are got up more to the taste of the people in the colonies generally; and they can always be supplied in such quantities as may be required at the proper season on short notice. Herein lies the great secret of the present success of the silk trade in Victoria. Its expansion is entirely owing to the altered aspect of things in reference to what has just been pointed out. Where ready-made silk goods were largely imported from England, the importers and their customers ran great risks, owing to the unsuitability of many of them for the colonial market, and to their being obliged for this reason to keep so large a stock on hand. They did not then understand how to make up this description of goods, and had, therefore, either to put up with the losses sustained on the unsuitable portion, or were driven to the necessity of seeking to cover them by placing higher prices on the suitable portion. But they now understand this just as well as it is understood in London, and the colonial taste can be better consulted by the Melbourne than by the London manufacturers. A smaller stock is consequently required for the supply of the Victorian and other colonial markets, and there is a chance of much greater profits. Towards bringing about this state of things, the late changes in the tariff have contributed largely. They have hastened on what it would otherwise have taken some years to accomplish. They have forced the dealers in silk goods to make them out of the piece, rather than submit to the higher duty on the manufactured articles imported, and the allowance of a rebate on the articles they make up for export has been of the greatest assistance. In self-defence, the dealers in these goods have had to fling away their crutches, and stand on their own legs; and now they find themselves not only able to walk, but even to run. Having so far mastered the manufacturing portion of the silk trade, the production of the raw material in sufficient quantity for home consumption should next be sought. That may not be done during the life-time of the present generation, on account of the demand for it being so great, but it is gratifying to observe that there is a determination everywhere to make its accomplishment both speedy and sure.



## ACCLIMATISATION SOCIETY, Melbourne.

333A Frame of Silk Cocoons

AITCHISON, HANNAH LOUISA, Little Dorritt-street, Carlton.

333 Antimacassar, Flower Girl with Basket of Flowers

334 Antimacassar, Rebecca at the Well

BENJAMIN, MRS. J., Park View, Bond-street, Simpsons-road.

335 Case of Stays

COMPTON, W. J., East Trentham, Kyneton.

1351 Rug of Opossum, Kangaroo, and Wallaby Skins, by an amateur

BROWN, G. S., &amp; CO., 13 Bourke-street.

336 Colonial Manufactures (Clothing) for Ladies' and Gentlemen's Wear. Mens', Boys', and Youths' Clothing; Ladies' Underclothing and Gentlemen's Shirt Department; Dress and Mantle Making Department, and Miscellaneous

COHN &amp; CO., 8 Hawke-street, West Melbourne.

337 Rugs, Drawingroom and Bedroom (registered); Mats and Tanned Skins, manufactured entirely from native skins

337A Glass Case of Muffs, Collarets, and Sealskin Cape, from native furs

CRONIN, B., 53 Victoria-parade.

339 Bonnet Shapes, Hats, &amp;c.

DECOURTET, MADAME SOULIE, 92 Russell-street.

340 Corset Cage Hygienique

341 Braces for Young Ladies

342 Ladies' Belts

DONALDSON, M., Station-street, Carlton.

343 Large Antimacassar, very handsome design, shamrock pattern

GALVIN, JOHN, 73 Collins-street West.

344 One Glass Case of Hats and Hatters' Materials, and Hats in various stages of manufacture

GEACH &amp; ELLIS, 28 Swanston-street.

345 Cambric Frilling, known to the trade as Ellis's Patent Frillings, and Apparatus for the manufacture

GRAHAM, MRS. ARTHUR, Carlton.

345A Pair of Crochet-work Curtains

GREEN, JOHN R. H., 154 Gertrude-street.

346 Muffs, Tippets, &amp;c.

347 Opera Cloaks, &amp;c.

347A Registered Hot-water Foot Muff, will retain its heat eighteen hours, and can then be replenished without removing the Muff

HART, MISS M., 101 Gertrude-street, Fitzroy.

348 Tatting Pincushion





## INDUSTRIAL AND REFORMATORY SCHOOLS, INSPECTOR OF.

- 9 Articles of Clothing made at the Industrial and Reformatory Schools

ILIFFE, FRANCIS, 92 Collins-street East, Melbourne.

- 9A Woven Silk Ribbons and Bookmarkers, framed

- 9B Samples of Woven Silk and Cotton Curtain Trimmings

JOHNSTONE, ISABELLA, Williamstown.

- 9c Variety of Crochet Work

LEVIATHAN CLOTHING COMPANY, Bourke-street East.

- 0 Case of Colonial-made Clothing from Colonial Tweeds. Colonial-made Clothing from English and Scotch Tweeds and Cloths

MARTIN, CHARLES R., 3 Flinders-lane East.

- 1 Military and Masonic Embroidery

M'DONALD, JANE, Fitzroy.

- 2 Colonial Manufactured Lace Collars and Cuffs

MITCHELL, MRS., Clarendon-street, Emerald Hill.

- 3 Real Point Lace

MUCHALL, MRS. SARAH, 188 Canning-street, Carlton.

- 4 Point Lace Collar, worked by hand

- 5 Point Lace Handkerchief

PENAL ESTABLISHMENTS, INSPECTOR-GENERAL OF.

- 6 2 Hats, Cabbagetree

- 7 Suit of Prison Clothing

- 8 Housewives, 2

PIKE, MRS., Toorak.

- 9 Raw Silk

ROBERTSON, JOHN, 89 Lonsdale-street.

- 0 Specimens of Old Silks, Dyed and Printed

STRODE, KATE, Richmond.

- 1 Crochet Quilt

STEWART, MRS., Toorak-road

- 2 Case of Stays and Ladies' Belts

TAIT, W. B., Ross-street, Emerald Hill.

- 3 Oilskin Coat and Oilcloth

TIMBRELL, ANN, Silk Farm, Plenty-road.

- 4 Samples of Victorian Cultivated Silk in Cocoon, and Hanks, exhibiting a quantity bleached, dyed, and worked upon llama

YEOMANS, W. R., Flinders-lane East.

- 5 Hats of Silk and Felt, or Wool and Fur

(The following is exhibited by the TRUSTEES OF THE INDUSTRIAL AND TECHNOLOGICAL MUSEUM, and form part of the collections of the Technological Museum.)

- 366 Silk Culture.—Diagram or Illustrated Table, containing concise rules for their management according to the best methods of the most skilful cultivators, arranged separately for the use of the rearers of the worms, and of the managers of the worm room.

## SECTION II.—STEEL MANUFACTURES AND CUTLERY.

### SECTIONAL COMMITTEE:

The Hon. C. J. Jenner, Chairman.

The Hon. H. Spensley | W. W. Wardell, Esq.

### EXPERTS:

The Hon. C. J. Jenner.  
F. W. Langlands, Esq.

A. K. Smith, Esq.  
W. K. Thomson, Esq.

R. McDougall, Esq.  
J. Whitney, Esq.

To describe at length the rise and progress of our steel and iron manufacture, would be to write a history of the colony, so intimate has been the connection of this industry with the increase of our population and the development of our resources. No such description can be attempted in the space here available, but still the subject must not be altogether excluded. We shall therefore offer a few facts in illustration of this branch of the subject. To begin at the beginning, we should have to record the names of the blacksmiths who accompanied Batman or Fawkner to Port Phillip in 1835, and tell how they proceeded to set up their anvils and bellows on the banks of the Yarra; but it will suffice to commence with the year 1840. That year witnessed the first setting up, on a sufficiently humble scale, of our pioneer iron foundry and engineering shop, which has since grown into very large dimensions, but is now only one of very many similar establishments busily and usefully at work in all parts of the colony. It will be necessary to avoid as much as possible the mention of names in this notice, lest unintentional injustice should be done; but the two men, Robert Langlands and Thomas Fulton, now removed from among us, who commenced the business to which we have just made reference, must receive some recognition. Both skilled mechanics, and industrious and persevering men, they arrived in Port Phillip in the same ship, and commenced business on the site of the present Langlands Foundry in Flinders-street. At first their work was that of general blacksmiths, including ship, carriage, and dray work, the manufacture of wool-presses, bullock-yokes, &c., and from the beginning they were highly prosperous. As the trade of the colony increased, new demands were made upon their manufacturing capabilities, and additional capital was by-and-by brought into their business by other members of the Langlands family. After a time, Mr. Fulton seceded from the firm, and, in company with another, set up a new establishment, which has also grown and increased with the growth of the colony. The Langlands and the Fulton Foundries are now co-operative concerns, and it is gratifying to know





that they both yield satisfactory incomes to the hundreds of highly-skilled workmen by whose labour they are carried on.

Another important manufactory is the engine-shop at Williamstown, in which the rolling stock of the Government Railways is repaired. Hundreds of men are here regularly employed, and most excellent work is turned out. Some engines have been made in these shops; and the repairs to engines and carriages that are constantly going on are sometimes so extensive that they involve nearly as much expenditure of labour, and the exercise of as much skill, as would the construction of engines entirely new. This is done to utilise portions of old engines and carriages that have still some wear in them. The Hobson's Bay and Suburban Railway Company has also an extensive establishment for the building and repair of its rolling stock. The private iron foundry and engineering establishments that have succeeded those of Langlands and Fulton, and now compete with the co-operative associations which bear their names, are numerous and extensive. They are situated in and around Melbourne, and at Geelong, Ballarat, Castlemaine, Sandhurst, and elsewhere. In all of them, as well as in the Government shops, the best and newest of machinery is employed; and persons uninitiated in the mysteries of modern manufacture are often surprised, even when visiting some of our least pretentious engineering shops, to see iron and steel treated as if they were recently-made cheese. The steam hammer is in general use, as well as steam-driven lathes, and punching, boring, planing, slotting and screw-making machines; in short, every appurtenance that can either save labour or contribute to the completeness of the work in hand.

The materials employed by our iron and steel workers are for the most part imported—pig iron in great quantities; Swedish, Lowmoor, and other malleable irons, in every shape; and steel in its various forms. Of late, old iron and steel have been carefully collected in the colony, and are worked up in conjunction with new material. Scraps of cast metal are mixed with pig iron by the founders, and scraps of malleable iron and steel are either used up at the rolling mill (which is one of our manufacturing conveniences), or reformed under the steam hammers of the machine shops.

The several branches of our steel and iron manufactures will come under more minute consideration as we give some account of the produce of the establishments already referred to, and of less ambitious establishments dealing with similar materials:—

There is not much to be said about our manufacture of cutlery. Knives, razors, surgical instruments, and a few other articles of cutlery, *have* been made in the colony, but scarcely as an article of commerce. They have been made to meet an emergency, or as an exhibition of skill. The only articles of cutlery that have been made as a regular matter of business are foot-rotting knives and speyidg needles, and not very many of them. At one time, knives for reaping, mowing, and chaff-cutting machines were made in the colony, but it is now generally found more profitable to import them from England. Of steel manufactures actually alive in the colony, excluding those carried on in the larger establishments, in connection with engine-making, we can only enumerate the making of a few cutting knives for machines, and the conversion of old files and saws into new; a few



mechanics, provided with the proper apparatus, being constantly employed in this last-named work. Any kind of implement that can be made out of sheet steel, including saws, can be made here, but it is in general found more advantageous to use imported articles, and it is only when something of an unusual pattern is required that our skill in this direction is brought into use.

But if we do but little in steel, as yet, we do a very great deal in iron. To tell what we do not make out of this material would be a more easy task than that which has now to be attempted. Our larger engineering shops supply new boilers to steamships of 1000 tons burthen, and replace the several portions of their engines as they wear out. They also cast and finish cylinders up to 7 feet in diameter. Large iron steamers have not yet been built outright in the colony, but every part of their hulls, engines, boilers, and other fittings have been supplied to them for many years past, and six or eight small steamers, of 70 horse-power and under, have been entirely built and completely furnished in the colony. At least four locomotive engines have been built in the colony (besides those made or re-made at the two Railway workshops)—one for the Hobson's Bay Company, and three for railway contractors. Some of these are at work in Tasmania and New Zealand, as contractors' engines, and one recently turned out in a Melbourne shop is at work on the North-Eastern line. The last-mentioned is an excellent engine of about 40 horse-power, weighing 25 tons. Fifteen engines are now being built for the Government, for use on our new railways, by a Ballarat firm, and one of these will probably be seen at work on the Ballarat railway before the Exhibition closes. A great number of engines have been made in the colony for flour mills and other manufactories. These range up to 40 or 50 horse-power. The description of engine which seems to be preferred in the colony is the horizontal stationary engine, with Cornish boiler; although all kinds are made, as well as multitubular boilers for marine and locomotive engines. But by far the largest demand for this kind of work has come from the gold-fields. When our alluvial miners began to prosecute their researches under the basaltic rock, and to a depth of hundreds of feet, it became necessary to employ steam-power in pumping and winding; and a demand for engines arose which gave a great impetus to the engineering trade. The growth of quartz mining created an additional demand, and the manufacture of crushing and separating machinery sprang up, along with a greatly-increased demand for engines and boilers. At the same time there have been many other demands upon the resources of our manufacturers. In the construction of our State railways an immense quantity of iron girders have been used, of which a large proportion have been made in the colony; and cylinders for the supporting piers of railway bridges are also made in the colony. Railway carriages and trucks are another branch of the iron manufacture, and our architects make extensive use of iron, in the form of breastsummers and the framework of the roofs of large buildings. In the construction of ordinary bridges, too, iron is often employed, and much of the same material is used up in the manufacture of pipes for water-supply purposes.

Next in importance to the iron-founding and engineering industry,





comes that of agricultural implement making. In Melbourne, and throughout the colony, there are many extensive establishments devoted to this manufacture, and a very large quantity of excellent farming machinery is turned out by them every year. Our reaping, mowing, threshing, and winnowing machines are second to none in the world, and command higher prices than similar articles imported from Great Britain and America. In ploughs, too, we may claim the palm for our own workmen. Every novelty that is introduced elsewhere is immediately adopted here, and double-furrow and anti-friction ploughs are already familiar objects in our implement stores. For elegance of form, perfection of finish, and lightness of draught, Victorian ploughs are unsurpassed. Wool presses, wine and cheese presses, chaff-cutters, corn-crushers, and all the other ingenious contrivances by which modern inventiveness lightens the labour of the producer of natural substances, are made here of the very best description; and these manufactures afford profitable employment to much labour and capital, while it uses up a great deal of steel and iron. One branch of the Victorian iron manufacture that has grown into large dimensions is the production of a simple domestic utensil known as the "colonial oven." This is a very unpretending apparatus, but, being cheap and useful, it keeps the more elaborate American stove and English range within narrow compass. The latter is seldom seen in houses of less value than £80 a year, while the colonial oven is in all but universal use in the humbler homes of the people. It is turned out in thousands every year.

Machinery for the manufacture of tobacco, and of boots and shoes, and for the sawing and moulding and boring of timber, is extensively manufactured, while our paper and woollen mills, our breweries, distilleries, and meat-preserving establishments, are constantly making demands upon the resources of our workers in steel and iron, whether for new work or for repairs.

Among the minor operators in iron may be enumerated the wireworkers. These carry on an extensive trade in bird cages, flower stands, &c., which they produce of elegant design and perfect finish. The tinned-iron ware used in the colony is for the most part of domestic manufacture, and is produced of excellent quality, at reasonable prices. The meat-preserving companies are the best employers of the white-iron smith. They made several attempts to import the different parts of which meat-tins consist, in a prepared condition, ready to be put together in the colony; but it was found that a considerable percentage of these always arrived in a damaged state, and the attempt was accordingly given up. The tins are now wholly manufactured in the colony, of course of imported plate. The success of the meat preserving manufacture requires the tins to be absolutely air-tight, and the utmost care must therefore be exercised in the soldering of their joints. On this task the most skilful and experienced men are employed, and these receive handsome wages. There are a number of gun and lock smiths profitably employed in Melbourne and other towns of the colony, but chiefly in repairs. The horse-shoeing trade is of course an important one in a country in which equitation is much practised, and competent judges say that our workmen are exceptionally well skilled in their useful art. The manufacture of iron bedsteads is growing into impor-

tance in the colony, as well as that of carriage, bed, and cushion springs. Water power is extensively employed in Melbourne in the propelling of small engines, such as warehouse lifts and the like; and the manufacture of these engines is a branch of our iron manufacture. Hydraulic presses are employed in compressing wool bales, trusses of hay, &c., and for other purposes, and our mechanics are quite capable of supplying those. Such common and familiar utilities as spades and shovels, axes, adzes, and hammers are made in the colony, but not in large quantities. Gold-diggers' picks have been rather extensively manufactured, and this fact illustrates a condition of things that has contributed more than anything else to the success of our iron manufacture. Our prosperous community never grudged to pay a good price for articles that exactly suited its requirements, and has often been impelled to buy at a dear rate in order that its wants might be promptly supplied. The digger working in a golden hole did not care what price he paid for his pick, so long as it was of the kind he needed; and the mining company that had the luck to own a rich claim did not hesitate to pay far higher than English prices for its engine and boiler, its puddling mill, or its stamping battery, provided it got what it required, of the proper quality and pattern, and *at once*. In other branches of Victorian industry the same motives were at work, which helps to explain the rapid growth of our iron manufacture.

In this brief sketch of an important department of Victorian industry, much interesting information has necessarily been kept back through the exigencies of space.

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BOOTHBY, E. R., 16 Oxford-street, Collingwood.

- 369A The Tubular Water Indicator Kettle has a bottom slightly hollowed, and a tube passing through the kettle so that the flame is drawn up and passes out behind the handle, thus giving double the heating surface, and causing the water to boil in very much less than the usual time. The Indicator is a simple arrangement showing the height of the water. The improved Kettle would not cost more than 2s. over the ordinary article

CASTLE, JOHN, 13 Latrobe-street West, Melbourne.

- 369 Files recut in this city

DANKS, JOHN, Bourke-street.

- 369B Case of Brassware

FLETCHER, JOSEPH, 15 Elizabeth-street, Melbourne.

- 370 Ornamental Wire-work

GLENISTER, ALFRED, Mercer-street, Geelong.

- 371 One  $1\frac{1}{4}$ -inch half Patent Axletree Arm  
 372 One  $1\frac{1}{4}$ -inch Mail Patent Axletree Arm, with Bolts and Nuts, Iron Plates, and Leather Washers  
 373 One  $1\frac{1}{4}$ -inch Collinge's Patent Axletree Arm  
 374 One  $1\frac{1}{8}$ -inch Common Nut Axletree Arm

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DEER & ASHBURNER, 38 Little Collins-street East, Melbourne.

Wire Work and Wove Wire

HARRATT, HENRY, Chetwynd-street, Hotham.

- 1 1½-inch Common Nut Axle
- 1 1½-inch Patent Solid Collar Axle
- 1 1½-inch Mail Patent Axle
- 1 1½-inch Mail Patent Axle
- 1 1½-inch Mail Patent Axle
- 1 Embossing Press and Die, wrought iron handle
- 1 " " "

HENSON & CO., 98 Royal-lane, Melbourne.

- 1 Gun Materials, namely—Bullet-compressing Machine, Improved Bullet Mould, Model of Breeth-loading Cannon, Snapcaps, Muzzle Stoppers, Cleaning Brushes

JENNINGS, JAMES, 99 Queen-street, Melbourne.

- 1 One case Spectacles

LYSTER & COOKE, 151 Stephen-street, Melbourne.

- 5 Half-tester Bedstead
- 3 Swing Cot
- 7 Hospital Bedstead
- 3 Invalid's Chair
- 2 Two Hall Chairs
- 1 Register Stove
- 1 Umbrella Stand
- 2 Two Kitchen Ranges
- 3 Two Fenders
- 4 Balcony Ironwork

MATHIESON, JAMES, 16 Dudley-street, West Melbourne.

- 5 Masons' Tools
- 6 Mining Implements

MONGAN, ANTHONY, Albury.

- 7 Hooks (improved) for hoisting and draughting purposes

MOURANT, JOHN TIMOTHY, 77 Oxford-street, Collingwood.

- 8 Gas Stove

OWENS, WILLIAM, Beechworth.

- 9 Horse Shoes, manufactured by exhibitor

PARKER & CO., 43 Little Bourke-street East, Melbourne.

- 0 Parker's improved Kitchen Range
- 1 Portable Challenge Cooking Stove
- 2 Ship's Cooking Stove
- 3 Improved Colonial Oven

PEMBERTON, WALTER, JUN., Beechworth.

- 4 Horse Shoes, manufactured by exhibitor



- PULLINGER, F., 1A Flinders-lane West, Melbourne.  
 405 Kitchen Ranges  
 RADFORD, WILLIAM, 19 Post-Office Place, Melbourne.  
 406 Japanned and Plain Tinware  
 SANDS & M'DOUGALL, Collins-street.  
 406A Specimens of Electro-plate  
 STONEMAN, ALFRED, Stephenson-street, Richmond.  
 407 One pair Elliptic Springs for Carriage  
 408 „ Concord Side Springs for Buggy  
 409 „ Grasshopper Springs for Spring Cart  
 STONEMAN, EDWARD, Stephenson-street, Richmond.  
 410 Carriage Springs  
 411 Railway Springs  
 STURTEVANT, B., 19 Lygon-street.  
 411A Specimens of Electro-plate Carriage Mountings  
 VALOT, PETER, 26 Lothian-street, Hotham.  
 412 Three Sluice Forks  
 VORRATH, W., 94 Swanston-street, Melbourne.  
 413 Spring Mattress with Iron Bedstead  
 WALKER, A. R., 40 Latrobe-street West, Melbourne.  
 414 Gas Cooking Apparatus  
 WALLIS, F., & SONS, Otter and Wellington-streets, East Collingwood.  
 415 Colonial Ovens (improved)  
 416 Ornamental Iron Castings

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### SECTION III.—CARRIAGES.

#### SECTIONAL COMMITTEE:

The Hon. J. T. Smith, Chairman.  
 W Williams, Esq. | C. E. Bright, Esq. | M. M'Caw, Esq.

#### JURORS:

Captain Standish | E. Ashley, Esq.  
 W. Williams, Esq. | Hon. T. Loader.

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COACHMAKING cannot be described as one of our oldest industries. Indeed, it was but little required in the earlier years of the colony, inasmuch as there were no roads on which carriages could run. When wheeled conveyances first came into use, they were obtained from New South Wales, from England, and from Tasmania—chiefly from the last-named place, at which there was a considerable manufacture of carriages, convict labour being employed for the most part, and imported materials.





Relics of this period are still to be seen in the streets of Melbourne now and again, in the form of quaint-looking, old-fashioned phaetons and gigs, which, odd as they look, must have been excellently put together at first, or they would not have survived till the present time. It seems to have been about the year 1851 that carriage-building on anything like a considerable scale was commenced in Melbourne, and the vehicles then turned out were dog-carts on the English pattern, covered spring-carts, Stanhope gigs, family cars, and a very few cab-phaetons and barouches. The woods chiefly employed were English ash and oak, and colonial cedar, while the springs, axles, &c., were imported. After the gold discovery, the trade of the colony suddenly and rapidly increased, and there was a large importation of American goods, among which carriages formed an important item. One kind of American carriage proved highly useful in keeping up communication between Melbourne and Geelong and the interior. This was the thorough-brace stage coach, an admirable contrivance for fast-travelling on bad roads. Having no steel springs to snap, and being admirably strong in all its parts, it proved the means of opening up the colony in a way that could scarcely have been accomplished by any other means. The German waggon also did excellent service during many years of the colony's history, in the transport of goods through difficult country. This was a clumsy-looking conveyance, in the construction of which modern systems seem to have been carefully disregarded, and it certainly was far from being highly finished, but it had a way of keeping on its wheels, and holding together under trying circumstances, that was quite remarkable. It is still much used in some parts of the colony. The American waggon, which came after that last referred to, is a much more formidable machine. It is big and strong, and capable of doing almost any kind of rough work. Loaded with five or six tons, and drawn by six or eight horses, it makes journeys into the interior which are full of difficulty and adventure, and almost always without accident. In the early days of gold mining this waggon was almost the only means of conveyance into the interior, and thousands of colonists, now highly prosperous, recollect with gratitude how it helped them along their weary way, when, as newly-arrived adventurers, they made for the goldfields in search of fortune. Among early importations from America, were light carriages of the buggy kind, and this style of building has come to be almost universally adopted by our carriage-makers. At first, the Concord buggy was regarded with suspicion and disfavour by British-bred workmen, and in a lesser degree by the public. It looked so light and fragile, that to entrust one's self to it on a long journey over bad roads seemed to be something like a tempting of Providence. But the buggy soon found its way into general use, and experience showed that, though light, it was strong and durable, and that its very lightness became its best protection when it was necessary to drive it at a fast rate over fallen branches, over widely-spreading tree roots, or through swamps and creeks. When the thorough suitability of carriages on the American pattern was once established, our manufacturers adopted it, and English carriages fell into disuse. How fully the new mode has been acclimatised may be seen in

our principal streets at any hour of the day. Strongly made, of the best materials, the buggy is just the thing for a hot climate, bad roads, and rapid driving. There is no country in which the quality of its carriage work is more important than here, for the heat of the climate, the long distances that intervene between settlements, and the general hurry in which business is transacted, renders vehicular accommodation a necessity rather than a luxury. It is therefore highly satisfactory to find that the skill and enterprise of our carriage manufacturers has proved quite equal to the public demand upon their capabilities.

The following are a few of the articles turned out by our coachmakers:—The C spring barouche or landau, which costs about 300 guineas, and is an elegant and highly-finished carriage. It seats six persons, and weighs about 12 cwt.—Carriages that cost about 200 guineas, with elliptical, but without C springs. Excellent carriages are supplied at this price, including family carriages something like those used in England, physicians' broughams, &c. They seat four inside, and are about the same weight as the barouche.—Carriages on the barouche pattern, with room for two or four inside, and a commodious driving-seat, weighing 7 to 8 cwt., cost about £130 to £150 each.—A really good buggy, two or four-seated, suitable for family use, or for a medical practitioner or commercial traveller, costs from £70 to £80, if covered; uncovered, £20 less.—A good, useful two-seated buggy costs about £40, while tilburies, waggons, &c., cost from this sum down to £25.—A well-finished merchant's spring dray costs £35 to £40, and a good covered baker's or butcher's cart £30 to £35.—Waggonettes for street use cost from £65 upwards, and cars from £55 to £65, while a first-rate farmer's cart costs £15 to £25. Only one other branch of our carriage manufacture need be mentioned here, namely, the production of babies' coaches, or perambulators. Those are manufactured in such quantities, and are in such general use, as to become somewhat of a nuisance. Under the same name there are, of course, a great variety of inferior vehicles. The prices quoted may seem high, but it must be borne in mind that the articles enumerated are of the very best quality. In the higher-priced articles American ash and hickory are used, and English ash and oak, while the very best of home made and imported springs, axles, lamps, and fitting materials are also employed. In the cheaper articles kauri and Moreton Bay pine are used for certain purposes, and also Australian cedar and blue gum. Wages in the coachbuilding trade range between £2 10s. and £3 10s. per week, and the best talent is available, whether in the smiths', the wheelers', the carriage or the body makers', the painters', or the trimmers' department.

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ALSTON, GILBERT, Bulla.

417 Colonial-made Dray, manufactured of colonial timber, without paint

CLAPHAM, J. W., at F. B. Parrott's, Latrobe-street West, Melbourne.

417A Perambulator





## CRUTCH, WM., 5 Latrobe-street West.

- 418 A Victorian Barouche
- 419 An extension-top double or single seated Buggy
- 420 Queen's Buggy

## CUNNINGHAM, T., Woodend.

- 420A Jump-seat Buggy, can be used as a double or single seated Buggy

## DICKASON, THOS., Bridge-road, Richmond.

- 421 Child's Carriage, on stand

## DOUBLEDAY, A., 56 Little Collins-street.

- 422 Wood C Spring Buggy, with steel plate axles, the C springs being of American hickory

## EWING BROTHERS, Franklin-street West.

- 423 Albert Phaeton
- 424 Arch-coalbox Buggy

## GALLAND, JOHN, 63 Victoria-parade.

- 425 Two Victoria Phaetons

## HOUGHTON, W. G., Bridge-road, Richmond.

- 425A Perambulators

## HUDSPATH, WM., King-street.

- 426 One new Merchant's Spring Dray

## MELBOURNE CARRIAGE COMPANY.

- 427 One C Spring Landau
- 428 One Patent Buggy, showing Single, Double, and Treble Seats ; also showing patent Whiffletree for releasing uncontrollable horses (both Victorian patents)
- 429 One Light Buggy

## MURPHY, PETER, Toorak-road.

- 430 Buggy and Waggonette

## PARROTT, F. B., 21 Latrobe-street West.

- 431 One Queen's Phaeton, finished
- 432 One Express Waggon, of Colonial wood, not painted
- 433 Steel Carriage Springs, Steel Gearing for Buggies
- 434 One Buggy

## PETTIT BROTHERS, 5 Post-office Place.

- 435 Two Perambulators

## RAWLINGS, JAMES, 245 Swanston-street, Melbourne.

- 436 Double-seated Open Buggy
- 437 Single-seated Buggy, with hood ; mounted on Mail Axles, with wrought boxes



ROBERTSON, WAGNER & CO., Bourke-street East.

438 Two Buggies

STEVENSON & ELLIOT, King-street.

439 One Barouche Carriage, with movable side glasses

440 One Park Phaeton, fitted for one or a pair of ponies

441 One Brougham, in a progressive state, to be treated as technological exhibit

STICKLAND, F., 135 Latrobe-street East.

442 Queen's Phaeton

443 Specimen of Convertible Waggonette, suitable to families of moderate means

THORBURN & SON, Geelong.

444 Light Victoria Phaeton, with Hood, Pole, &c.

WOODWARD, THOMAS, Geelong.

445 One Queen's Buggy, with Cricket Seat, and Portable Driving Seat

446 One Excelsior Jump-seat Top Buggy

WHITE, DANIEL, 245 Swanston-street.

447 Single or Double seated Buggy

448 Single-seated Buggy

## SECTION IV.—AGRICULTURAL.

### CLASS I.—MACHINERY.

#### SECTIONAL COMMITTEE :

D. C. Macarthur, Esq.,	Chairman.	M. M'Caw, Esq.,	Vice-Chairman.
The Hon. W. H. F. Mitchell	Hon. John O'Shanassy	G. Bencraft, Esq.	
The Hon. R. C. Hope	S. Ramsden, Esq.	T. J. Sumner, Esq.	

#### EXPERTS:

Hon. W. T. F. Mitchell.	A. Lincoln, Esq.	G. Grant, Esq.
P. Fanning, Esq.	J. Mitchell, Esq.	J. Cooper, Esq.
W. K. Thomson, Esq.	Joel Harwood, Esq.	

THE agricultural resources of the colony of Victoria are very great, and are yet only in the initiatory stage of their development. The staple products of our farmers are wheat, barley, and oats, the last being cultivated fully as much for hay as for grain. Rye has been introduced and is grown on a small scale, chiefly for fodder; it is likely to prove a valuable auxiliary on the poorer soils, as it is very hardy, and thrives where other cereals would die. In the Western district potatoes are raised in large quantities, the soil and climate both being favourable. The





richer soils there have been known to produce as many as 14 tons an acre. As the climate is mild all the year round, and green food is never scarce except during the drought of summer, farmers do not require to cultivate root crops to feed their cattle, and consequently very few are grown. Mangel-wurtzel is the only one of any importance. Small quantities of peas, beans, maize, and sorghum, are cultivated, and the growth of the sugar-beet has now been started as a regular industry. The cultivation of hops, hemp, flax, and tobacco, has also been successfully established, but the cost of labour, and the almost impossibility of getting experienced hands, tends greatly to retard the development of such industries as well as tobacco-growing. Fruit of all kinds grows well, and the Foreign Industries Commissioners point out the drying and preservation of fruits as an industry which might well be developed. They also direct special attention to olive culture. "The olive tree grows in Victoria and many other parts of extra-tropical Australia, with a luxuriance rarely attained in Europe, and bears fruit abundantly with little or no care." Considerable quantities are now grown in the neighbourhood of Melbourne, "but owing to there being no sufficient means available for pressing, the olives have in most cases been allowed to fall from the trees unused, or else have been applied to so poor a purpose as fattening fowls." Our present purpose, however, is more particularly with the farming of the colony proper, than with the novel productions which have been little more than experimentally tried. The settlement of the country has progressed rapidly under the Land Acts of 1865 and 1869, and at the close of the last statistical year, 31st March, upwards of ten millions of acres were taken up, two-thirds of which was freehold. The area under tillage is 937,220 acres, not quite a tenth of the whole in occupation. The crop most extensively cultivated is, of course, wheat, which, last year, covered 334,609 acres; oats come next, occupying 175,944 acres; barley, 16,772; other cereals, 11,204; potatoes, 39,064; other green crops, 3,643; hay, 103,206; green forage, 150,775. The remainder of the area in occupation is devoted to vines, of which there are 5500 acres; tobacco, 300; and other miscellaneous crops. The rich basaltic soils, which it is calculated occupy about 12,000 square miles of the colony, and the deep alluviums of the river valleys, have yielded magnificent returns for the labour of the husbandman, and to them we are chiefly indebted for our supplies of wheat; but the system of culture pursued has been in the great majority of cases a ruinous one, namely, drawing crop after crop of the same kind from the soil, without either allowing it to rest or restoring any equivalent for the mineral and vegetable constituents abstracted. Large areas of the best land have been by this means exhausted, and are now lying neglected. When in their pristine vigour these lands yielded from 30 to 40, and some as high as 60, bushels of wheat an acre, but the quantity dwindled year by year, till at last it became so small, that it would not pay cultivation. A better and more rational system is now being introduced, however. With the exception of parts of Gipps Land, almost all the best land in the colony has been taken up, and the farmer, if he exhausts the productive power of his allotment, cannot, as before, get a fresh block, equally good,

ready to his hand. He sees, therefore, that nothing but ruin can result from the system of perpetual cropping, and as the low price of agricultural produce (wheat last year averaged 4s. 8d.; oats, 2s. 11½d.; and barley, 3s. 6½d.) and the high price of labour will not allow of a large expenditure in manures, he must combine pastoral with agricultural pursuits. The economic conditions of the country do not admit of high scientific farming, such as is pursued in old and thickly-peopled countries; and instead of liberal manuring and rotation of crops, the Victorian farmer must keep his soil in good heart by cropping only at intervals and grazing for the rest. The larger the number of live stock that can be kept on the land the better, and all land after being cropped should be sown with grass, perennial rye-grass, or a mixture of that and prairie-grass. The latter is exceedingly succulent and grows luxuriantly, but does not stand feeding well, and disappears from the pasture after a year or two. For this mixed system of farming the introduction of long-woolled sheep cannot fail to be of immense benefit. While the merino continues to hold its place in the purely pastoral districts, the Leicester and Lincolns—being so entirely suitable for farm purposes—will, no doubt, supplant it in the settled districts. The number of cattle at present on land unconnected with stations is 636,589; of sheep, 3,814,698; and of pigs, 171,684; making the total live stock in the hands of agriculturists, 4,784,046. The following table shows the average under the various cereal and other crops cultivated by farmers during the last ten years:—

Year.	Wheat. acres.	Oats. acres.	Barley. acres.	Other Cereals. acres.	Potatoes. acres.	Other Green Crops. acres.	Hay. acres.	Green Forage. acres.
1863 ..	149,392	152,326	7,795	2,983	27,584	1,371	90,350	35,342
1864 ..	125,040	144,303	7,648	3,799	31,172	1,415	85,146	40,061
1865 ..	178,628	102,817	6,887	5,130	31,644	1,850	97,902	55,830
1866 ..	208,688	129,284	9,915	7,684	32,403	2,890	92,472	64,174
1867 ..	216,989	125,345	15,982	5,613	35,881	2,078	108,873	60,372
1868 ..	259,804	114,936	19,222	6,968	36,204	2,875	112,282	87,403
1869 ..	288,514	144,791	28,115	9,344	41,210	4,181	140,435	102,530
1871 ..	284,167	149,309	19,646	6,548	39,026	3,130	163,181	158,853
1872 ..	334,609	175,944	16,172	11,204	39,064	3,643	103,206	150,775

The following table shows the produce raised during the same period:—

Year ending 31st March.	Wheat. bushels.	Oats. bushels.	Barley. bushels.	Other Cereals. bushels.	Potatoes. tons.	Other Green Crops. tons.	Hay. tons.
1863 ..	3,008,487	2,504,301	143,056	38,977	50,567	13,855	110,680
1864 ..	1,338,762	3,497,520	130,604	53,413	74,947	14,129	121,841
1865 ..	1,899,371	2,694,415	124,849	50,668	59,825	8,667	97,740
1866 ..	3,514,227	2,279,468	153,490	73,390	83,166	15,633	96,101
1867 ..	4,641,205	3,880,406	299,217	123,616	88,880	24,252	161,243
1868 ..	3,411,663	2,333,472	324,706	82,177	117,787	24,648	140,562
1869 ..	4,229,228	2,258,623	292,666	88,920	79,944	16,922	122,800
1870 ..	5,697,056	3,761,408	690,248	155,587	127,645	33,697	224,816
1871 ..	2,870,409	2,237,010	240,825	108,333	127,879	22,529	183,708
1872 ..	4,500,795	3,289,889	335,506	212,546	125,841	33,252	144,637

It will be seen that great differences exist in the yields of different years, especially of the wheat crop, caused chiefly by the varying character of the seasons, and the prevalence or otherwise of rust and other blights. The contrast between the harvest of 1871 and those of the preceding and following years is very marked. The average





lbs per acre also vary correspondingly, as is shown by the following table :—

Year ending 31st March.	Wheat. bushels.	Oats. bushels.	Barley. bushels.	Potatoes. tons	Hay. tons.
1863 ...	18·6	23·1	20·9	2·0	1·1
1864 ...	9·0	23·0	16·8	2·7	1·3
1865 ...	15·2	18·7	16·3	1·9	1·1
1866 ...	19·7	22·2	22·3	2·6	1·0
1867 ...	22·3	30·0	30·2	2·7	1·7
1868 ...	15·7	18·6	20·3	3·3	1·3
1869 ...	16·3	19·7	15·2	2·2	1·1
1870 ...	19·75	25·98	24·55	3·09	1·60
1871 ...	10·10	14·98	12·26	3·27	1·13
1872 ...	13·45	18·26	20·00	3·22	1·40

is is, no doubt, a small average yield, as compared with that of Great Britain, but the conditions of Australian farming are very different; and when we consider that a good part of the land under cultivation has been cropped for a number of years successively, receiving little or no manure, we cannot expect to find the returns larger. The quality of Australian wheat is superior, and some good samples, from various districts of the colony, will be found in the Exhibition. The average weight of the wheat grown last year was 59 lbs. per bushel. The sorts most generally cultivated are white tuscan, purple straw, white lammas, white velvet, &c. The average weight of oats last year was 39½ lbs. per bushel. A good many varieties are grown, but none so much as the white oat. Barley has been cultivated a good deal of late years for distilling purposes, the largest crop having been raised in 1870. The average weight of last year's crop, which reached 335,000 bushels, was 59 lbs.

The high price of labour in Victoria has stimulated the introduction of labour-saving appliances in farm work, and the agricultural implements and machinery form a very interesting feature of this department of the Exhibition. Reaping machines have been a great help to the farmer, but they require the employment of a large number of hands. Nothing more economical is desiderated, and liberal prizes have been offered by the agricultural societies for a machine that will bind as well as reap. As yet, however, no successful effort has been made to produce such an article. The double-furrow plough is likely to be a great acquisition. The following return of the implements and machines in the colony during the year ending 31st March, 1872, will afford some idea of the enterprise of our farmers. This as well as the other tables are taken from the published statistics of the Registrar-General, Mr. Archer:—Reapers, 32,725; chaff-cutters, 8034; clod crushers, 8; corn crushers, 134; iron screens, 14; cultivators, 30; grubbers, 54; harrows, 22,382; hay rakes, 265; hay rakes (horse), 434; horse hoes, 184; horse works, 10; mowing machines, 623; ploughs, 26,519; reaping machines, 5052; rollers, 7273; scarifiers, 617; scufflers, 41; seed drills, 46; sowing machines, 7; strippers, 437; threshing machines, 970; waggons, 6161; winnowing machines, 2002. In conclusion, we may add that the manufacture of artificial manures is now largely carried on by several firms, one of which has patented a process for making bonedust into condensed cakes for exportation. Samples of these and of the other manures made are exhibited.



## BODINGTON, ROBT., Queensberry-street.

- 449 Sharpe's Patent Sheep Support

## BUNCLE, JOHN, Parkside Iron Works, Hotham.

- 450 One Two Horse-Power, and Steam or Horse Power Chaffcutter  
 450A Double Maize and Corn Crushing Machine  
 450B Hand-power Chaffcutting Machine  
 450c Improved Firewood Sawbench

## CUNNINGHAM, T., Woodend.

- 451 One Wheeled Plough

## HENDERSON, THOS., &amp; CO., 89 &amp; 91 Elizabeth-street.

- 453 Mowing and Reaping Machine (4 wheeled), with two speeds,
- 
- Bevelled Bar, Steeled Fingers, Jointed Finger Bar, &c.

## LENNON, HUGH, 83 &amp; 85 Elizabeth-street North.

- 454 One New Improved Soleless or "Anti-friction" Plough  
 455 One New Improved Shifting Handles Vineyard Plough  
 456 One New Set Dynamic Singletrees, for testing the draught of  
 Ploughs  
 457 Reaping Machines, &c. (when in motion)  
 458 One New Revolving Mould Board Plough

## NICHOLSON, JOSEPH, 23 Bouverie-street, Carlton.

- 459 Improved Mowing Machine, fitted with Steel Finger Bar  
 460 Patent Double Speed Reaper and Mower, fitted with eccentric  
 bush on Main Driving Axle, for simply and instantly chang-  
 ing the speed from Fast to Slow, and also throwing the  
 Machine out of Gear

(The following exhibits, from No. 474 to No. 502 inclusive, are exhibited  
 by the TRUSTEES OF THE INDUSTRIAL AND TECHNOLOGICAL  
 MUSEUM, and form part of the collections of the Technological  
 Museum.)

- 474 Stump Extractor, model of Mansfield and Hewitt's Patent  
 475 Reaping Machines, invented by R. Savage  
 476 Hay-making Machine, Nicholson's Patent Double Action  
 477 Turnip Cutter, Gardner's Double Acting, Ransomes and Sims  
 478 Universal Mill  
 479 Chaffcutter  
 480 Biddell's Patent Combined Oat and Bean Mill  
 481 Bruising Mill  
 482 Three-feet Corn Mill  
 483 Lever Horse Rake  
 484 Portable Steam Engine, model of  
 485 Fixed Steam Engine  
 486 Oil Cake Breaker  
 487 Bean Cutter (Biddell's patent)  
 488 Oat Mill  
 489 Dressing Machine  
 490 Ploughs, single and double furrow





- 1 Plough, Model of, by R. Mounsie
- 2 Wine Press, Siedel's, Model of
- 3 Adelaide Reaping and Threshing Machine
- 4 First Prize Mowing and Reaping Machine (Morrison's)
- 5 Field Roller (24-inch), Ransomes and Sims
- 6 Single Blast Threshing, Riddling, Shaking, and Barley Awning do.
- 7 East Anglican Harrows, set of, do.
- 8 Scarifier, do.
- 9 Crosskill's Clod Crusher, do.
- 0 Two-horse Threshing Machine, do.
- 1 Horse Gear and Intermediate Motion, do.
- 2 Chaff Cutter

WEST, J. & B., Essendon.

- 7 Horse Hay Rake, with improved method of Raising Frame

WILDING & CO., Elizabeth-street.

- 3 Patent Travelling Box Wool Press
- 4 One Chaff Cutter
- 5 One Corn Crusher
- 6 One Patent Reaping Machine

## CLASS II.—MANURES.

### EXPERTS:

Graham, Esq.		W. Johnson, Esq.		A. Lincolne, Esq.
F. Search, Esq.		J. Mitchell, Esq.		

1 AUSTRALIAN BONE MILL COMPANY, 14 Bourke-street West,  
Melbourne.

- 1 Artificial Manures manufactured by the Australian Bone Mill Company
- 2 Bone Dust
- 3 Animal Guano
- 4 Super Phosphate
- 5 Bone Meal
- 6 Phosphoric Potash Manure
- 7 Phosphatic Guano
- 8 Special Coffee Manure
- 9 Special Sugar Manure
- 0 Half-Inch Bones for fruit trees

DRAPER & SON, 83 Bourke-street West.

- 1 Native Guano
- 2 Deodorising Compounds

KEAN, THOMAS, Portland.

- 3 Sample of Cape Nelson Cave Guano
- 4 Sample of Lawrence Rock Guano

MACMEIKAN & CO., 32 King-street.

- 3 Bone Dust
- 4 Animal Guano

- 530 Superphosphate of Lime  
 531 Coffee Manure  
 532 Neatsfoot and Trotter Oil, as well as the above Manures  
     into bricks (four samples), and deodorised, and made  
     Shipment (patented)  
         SCOTT, JOHN, Sandridge Bend.  
 533 Bone Dust, Manures, and Oils of Victorian Preparation

### CLASS III.—GRAIN, CEREALS, AND PULSE.

#### EXPERTS:

Hon. W. Degraives.	T. Laby, Esq.	M. M'Caw, Esq.
Geo. Bencraft, Esq.	Jas. Fry, Esq.	Thos. Aitken, Esq.
M. Buckley, Esq.	Jas. Anderson, Esq.	

#### BUCKLEY, EDWARD, Newbridge.

- 534 Eight bushels Wheat, the produce of Loddon District

#### BURSTON, SAM'L, & CO., 123 Flinders-street East.

- 535 Barley

#### EVANS, DAN. H., Wangaratta and Mansfield.

- 536 Two bags Wheat

#### GEYER, GEO. WILLIAM, Bald Hill, St. Arnaud.

- 537 Eight bushels Wheat, Red Tuscan

#### GILLESPIE, GEORGE, & CO., 55 & 57 Flinders-street.

- 538 Eight bushels of Wheat

#### GOULBURN SHIRE COUNCIL, per Nicholas Delaney, President

- 539 Two sacks of Wheat

#### HENDERSON, SAMUEL, 129 Collins-street West.

- 540 Eight bushels Oats

#### MATTHEWS, WM., Coghill's Creek.

- 541 Eight bushels Oats

- 543 One box of Wheat

#### REILLY, T.

- 543A Two bags Wheat

### CLASS IV.—DAIRY PRODUCE.

#### EXPERTS:

J. Benn, Esq.	W. Hogarth, Esq.	M. M'Caw, Esq.
	J. Sewell, Esq.	G. Lyell, Esq.

#### BALE, GEORGE E., Eddington.

- 544 Two sides Bacon (corn fed), weighing 112 lbs

- 545 Two Hams (corn fed)





## BUCHANAN, ROBT., Berwick.

6 Cheddar Cheese

BUTLER, JOHN, Blanket Gully, Campbell's Creek.

7 Two sides Bacon

CAMPBELL, DAVID, Burnt Bridge, Clarendon.

7A Fifty-six lbs. Salt Butter

COCKS, A., Langwoorna, Heathcote.

8 Two colonial-made Cheeses

FARMER, JOHN, Golden Point, Ballarat.

9 Two Hams

0 Two sides of Bacon

FOORD, JOHN, Eureka-street, Ballarat.

1 Two Hams

2 Two sides Bacon

HAWKESFORD &amp; CO., Murchison.

2A Preserved Bacon and Hams

HENDERSON, SAML., 129 Collins-street West.

3 Hams, Bacon, &amp;c.

JEFFRY, SAML., Yan Yean.

4 Fifty-seven lbs. Potted Butter

M'CAW, KNOX &amp; CO., Little Collins-street.

5 Dairy Utensils

MATTHEWS, WM., Coghill's Creek.

6 Two Cheeses

7 Two Cheeses

THOMSON, MARIANNE, Park Hill, Newstead.

7 Firkin of Butter

WATSON &amp; PATERSON, Bourke and Queen streets.

8 Hams, Bacon, Mess Pork

## CLASS V.—ROOTS, FRUITS, AND SEEDS.

## EXPERTS :

M'Arthur, Esq.

Jamson, Esq.

omner, Esq.

T. Laing, Esq.

Jno. Carson, Esq.

J. F. Levien, Esq.

J. B. Were, Esq.

J. Scott, Esq.

W. J. Greig, Esq.

following Exhibits, from No. 559 to No. 570 inclusive, are exhibited by the TRUSTEES OF THE INDUSTRIAL AND TECHNOLOGICAL MUSEUM, and form part of the collections of the Technological Museum.)

1 Five cases Wax Models of Victorian Fruit

2 Case of Pine Cone Specimens

3 Eight cases of Seeds of Grasses, Herbs, Cereals, Roots, Pulse, &amp;c.

4 Show Case of Hops, grown at Bairnsdale by A. Howitt, Esq., P.M.



- 563 Wall Cabinet, with collection of Rice, Flour, Sago, Meal, Starch, Arrowroot, Opium, Sugar, Pepper, Buckwheat, Cocoonut Oils, Cubebs, Betel Nuts, Long Pepper, Coffee, &c., from Netherlands India
- 564 Cotton—Wall Cabinet, containing a collection of Cottons from India, Brazil, United States, Italy, and Queensland. Also a collection of Vegetable Fibres from Queensland, South Australia, Netherlands India, Canada, New Caledonia, Victoria, Tasmania, Natal, New Zealand, and Spain
- 565 Wall Cabinet, containing a collection of Gums, Acids, and Essential Oils of Vegetable Products, in part presented by Messrs. Legg and Robertson
- 566 Double Cabinet, containing a collection of Spices, Vegetable Oils, Barks, Nuts, &c., presented by Germain Nicholson, Esq., and Messrs. Fitch and French
- 567 Vegetable Oils and Juices
- 568 Materials used in Manufacture of Oatmeal, Starch, Maizena
- 569 „ Sugar Refining
- 570 Confectionery

#### BOTANICAL GARDENS, Melbourne.

- 571 Preparations of Vegetable Products of Indigenous, as well as Foreign, Plants, cultivated in Victoria

#### CAMPBELL, D., Burnt Bridge, Clarendon.

- 572 Two cwt. Potatoes

#### GRIMMOND, DAVID, Wahgunyah.

- 573 Box of New Orleans Cotton, grown at Wahgunyah
- 574 „ Figs, grown and prepared at Wahgunyah

#### HENLEY, JAMES, Oxley.

- 575 Parcel of Hops, grown by Exhibitor at Oxley, near Beechworth

#### SHOOBRIDGE, E., & SONS, per Moody, J. J., Little Collins-st. West.

- 576 Tasmanian Hops (1872), grown by E. Shoobridge and Sons, of Bushy Park and Valleyfield, New Norfolk

### SECTION V.—DRYSALTERY, GROCERY, AND PREPARATION OF FOOD.

#### COMMITTEE :

Hon. W. M. K. Vale  
J. B. Patterson, Esq.  
J. Jones, Esq.

The Rev. J. I. Bleasdale  
S. S. Ritchie, Esq.  
G. Bencraft, Esq.

T. Lambert, Esq.  
S. Ramsden, Esq.

### CLASS I.—WHOLESALE CHEMICALS.

#### EXPERTS :

W. Johnson, Esq.  
J. Bosisto, Esq.

John Kruse, Esq.  
— Grimwade, Esq.

— Duerdin, Esq.





**DRYSALTERY, GROCERY, AND PREPARATIONS OF FOOD.**

THIS is a very varied, a very miscellaneous, a very useful collection of colonial products and manufactures. There may be no strong affinity between the production and manufacture of chemicals, and the production and manufacture of hemp and cordage; between the production and manufacture of jams and pickles, and the production and manufacture of paper and brushes. Yet, on the principle of "gathering up the fragments that nothing be lost," what could not be classified under any other head, has found an appropriate place under this. Nor, when looked at as a whole, do the articles thus brought together fail to impart a very instructive lesson. They show how readily a people in a new country can avail themselves of what advancing knowledge, science, and invention have done for older countries; as also how the general good of a community can be promoted by attention to little as well as to large and more attractive things. In a collection of this kind, nothing is too small for notice, however apparently trifling or insignificant. The world is made up of atoms.

**WHOLESALE CHEMICALS.**

CHEMICAL works are amongst the last things to be looked for in a new country. Yet there are no less than six establishments in Victoria bearing that designation, and several others to which it might not be inappropriately applied. At these chemical works proper, most of the things produced at similar establishments in England are produced here, whether for pharmaceutical, purely scientific, or more general purposes. Thousands of pounds, some £20,000 to £30,000, are invested in these establishments, and the gentlemen in charge of them manifest a very strong development of the practical business element in the objects to which they direct their attention. This may be seen in the number and variety of their exhibits. To the uninitiated there is nothing very interesting in the examination of a glass case filled with chemicals, or in handling samples of extracts of oil. But there is enough in these chemical exhibits to arrest the attention and minister to the gratification of all. They include preparations for curing all the ills that flesh is heir to; for restoring cattle and dogs to their former state of health; and for destroying insect life, whenever necessary. There are also disinfectants among them, manufactured from the clays of Victoria, with washing crystals, and toilet powders for softening the skin. Nor should the podophylline lozenges be overlooked. This is one of the newest and most agreeable forms for the exhibition of that powerful medicine. To some the samples of pure oleic acid, and of idioform, will probably be of interest.

**GUM, OIL, RESIN, VARNISHES.**

UNDER this head the most notable exhibits are candles and soap—stearine candles, and toilet and common soaps. The large consumption of gas and kerosene in the colony has made the former less important than they once were as articles of merchandise, but stearine candles are still imported to the extent of £110,000 sterling per annum. This is the more remarkable, inasmuch as Victoria has been independent of England

for its common soap for the last twenty years, and has only taken a small supply of English toilet soap, the total value of that imported last year not exceeding £20,000. There are thirty-one soap, candle, and tallow-rendering works in Victoria, at which a large number of hands are constantly employed, and steam is used up to between two and three hundred horse power. The capital invested in the machinery and plant, in the lands and buildings, connected with these works, amounts to £40,000 and upwards, and the whole of them turn out about 3500 tons of soap, 1000 tons of tallow candles, and 500 tons of stearine candles every year. Why the whole of the soap required for use in the colony, with the exception of a little toilet soap, should be produced at these establishments, and not candles, is thus explained. Until the duty of 2d. per lb. was placed on imported candles last year, the manufacturers could not produce stearine candles at such a price as to compete with the imported article. But they are now paying more attention to the manufacture of stearine candles, and hope to produce all that will be required for colonial use in another year or two at the price charged for English candles before the duty was put on. They have long since produced whatever tallow candles were required for domestic use. There is only one varnish manufactory in Victoria, but it is a firmly-established one, and promises to be a great success. At first, there was a great prejudice against its products, as against colonial manufactures generally, but that has given way during the last year or two, and its paints and varnishes are now being taken freely. It has, in fact, already cut out nearly one-half of the import trade, and will cut out the whole shortly, owing to the smaller price at which it can offer its various articles. Among the Victorian Varnish Company's exhibits, there is an entirely new varnish manufactured from Damar gum, a Batavian product, called enamel varnish, perfectly transparent, which when mixed with the paint, and laid on carefully, gives to the object to which it is applied the appearance of marble. It can be made at a moderately small advance on other first-class varnishes, and has been used on some pillars in Parliament House. The Victorian Company's varnishes are now very generally used in the Victorian Railway Carriage Department, and its deliveries amount to between 600 and 800 gallons per month. The Siamese glue-cement exhibited is a new article, of strictly Victorian origin, and must not be confounded with the American cement now in the market bearing a similar name, to which it is very superior. The chemical erasive soap exhibited is also a purely Victorian product, and is coming into general use. The India-rubber work exhibited is not only new, but excellent.

#### GROCERIES.

A VERY great improvement has been made in the manufacture of jams, jellies, and marmalades in Victoria during the last few years, as also in the manufacture of pickles, sauces, and other condiments. This is no more than might have been expected, seeing how largely the fruits from which they are manufactured are now grown here, and to what an extent those articles have always been used in Victoria. A still further improvement might, however, be made by the more general substitution of white earthenware glazed jars for tins in the manufacture of preserved fruits,





with the use, in some cases, of a better description of sugar, and as these have ceased to be articles of import, what has been suggested is all the more desirable. There are four jam and four pickle and sauce manufactories in Victoria, and the exhibits are numerous and varied. But the most important by far of all the exhibits under the head of groceries is the six jars of sugar forwarded by the Victoria Beetroot Sugar Company, manufactured at their works at Staughton Vale. If this new colonial industry could be made a success, of which there is every prospect, the jams of Victoria would be manufactured from her own sugars, as well as from her own fruits, and there would be an abundant supply for other and more general purposes. The Victorian Beetroot Sugar Company have not yet manufactured sufficient to enable them to lay claim to the bonus of £5000 offered to the first company which produces the first 500 tons of sugar from beets grown in the colony, but they have a large quantity of sugar now in the process of manufacture, and hope to add to this shortly. Their first crop of beets was not quite so good as they expected, but a second is now being put in, and the company are sanguine as to the result. The annual consumption of sugars of all descriptions in Victoria is not much short of £1,000,000 sterling, and if only one-half, or one third of this, could be produced in the colony, it would be of immense advantage. No one company could be expected to produce any such quantity as would represent half-a-million, or even one-third of a million, every year. But if the Victoria Beetroot Sugar Company proves a success, of which its promoters and shareholders are confident, other companies would be started, and there would soon be as many beetroot sugar companies as there are meat-preserving companies in Victoria. The great success which has attended the manufacture of sugar from beet-root during the last few years on the continent of Europe should lead to its getting a fair trial here, and it is gratifying to observe that there is now every prospect of this. For their own purposes the Victorian Beetroot Sugar Company have secured the right to a patent process, whereby the entire saccharine matter is obtained from the root, and thus the largest possible yield returned.

#### PRESERVED MEATS.

THERE were twenty-two meat-preserving establishments in Victoria on the 31st of March, 1872, conducted by companies, with large subscribed and paid-up capitals. These companies had then invested in machinery and plant, in land and buildings, nearly £100,000 for carrying on their business operations, and were employing at that time between 700 and 800 hands, besides machinery working up to between 200 and 300 horse-power. They all now use Festier's process, first introduced by Mr. Ritchie, of the Melbourne Meat-preserving Company, commonly known as the vacuum process, and they shipped no less than 14,870,000 lbs. of meat preserved by this process, valued at £355,000, to England during the year ending the 31st December, 1871. In consideration of the importance of this branch of industry to the colony, the Commissioners relaxed their rule as to the quantity to be forwarded by any one exhibitor, and of this relaxation the exhibitors have availed themselves to a very large extent. Samples



of different kinds of meat, preserved by the vacuum process, have been forwarded to the Exhibition, and Mr. James Harrison sends a sample of fresh meat, preserved by the freezing process. The Melbourne Meat-preserving Company, apparently acting on the principle that the eye is the passport to the stomach, have done all they can to make what they have to exhibit as inviting as possible. They have neither spared varnish on their tins, nor gold-leaf on their labels. They have even gone to the expense of getting one of M'Call's patented ring dishes turned in Huon pine, so that when the meat is laid on the table for testing at the Exhibition, it may be served up in the most attractive form. This to many will no doubt be a great novelty. There is no end to the form in which preserved meats appear among these exhibits. The Melbourne Meat-preserving Company exhibits boiled mutton, roast mutton, haricot mutton; boiled beef, roast beef, spiced beef, rump steaks stewed; with rabbits, soups, broths, and vegetables in every variety. So the rest of the companies, to a more limited extent. But enumeration in such cases is out of the question. They all help to make up the aggregate of this part of the Exhibition, which is really a very imposing one. But these meats are not preserved for use in the colony; they are to be sent to a country in which they are more needed, and in which they are daily becoming more and more prized. Victoria is doubtless greatly benefitted by being enabled to add these meats to her list of exports. But of how much greater importance are these exports to England, where meat in any shape is now becoming a luxury. These establishments must eventually revolutionise the English meat market by their operations.

#### PREPARATIONS OF FOOD.

STRICTLY speaking, malt does not belong to this class, being only an intermediate process whereby barley is made to minister to man's sustenance, but it stands high in the list of Victoria's manufactures. She imported malt last year to the value of £73,000, and barley to the value of £36,000. But this was far from covering her consumption. She used 897,000 bushels of malt last year in the manufacture of beer alone. Then our growth of barley was 335,000 bushels, so that she must have imported 562,000 bushels, either of malt or barley. There are sixteen malt-houses in the colony, more or less connected with the breweries, and these are constantly employed in turning out malt, quite equal to any produced in England. Some very fine samples of Australian malt, of black or patent malt, and of ordinary malt are exhibited. But chief among what may more strictly be called preparations of food, are the manufacture of oatmeal, pearl barley, groats, and maize meal. At one time these were all imported, oatmeal especially, in large quantities from England. But these no longer figure in the usual list of imports, except in small quantities, and these only occasionally. One house alone, Bencraft's, manufactures fifty to sixty tons of oatmeal per month, and there are also other large manufacturers. The total value of the pearl barley imported last year was only £1400, and there was no groats or maize meal imported. The whole of these articles will, in fact, shortly take a very respectable position in the list of exports. Rice is dressed here in large quantities, and sent to the other





onies, to Sydney, Adelaide, and New Zealand. A considerable quantity of *maizena* is also made here, and shipped away. The preparations of cowroot, cocoa, chocolate, and other things, in the list of exhibits, show the same tendency. In small things, as well as in large things, the manufactures of the colony are rapidly extending. The preparation of farinaceous food for infants and invalids is not overlooked.

# DIRECTOR OF THE BOTANICAL GARDENS, Melbourne.

## 7A Collection of Vegetable Products, viz.:—

- Fibre of *Cordyline Forsteri*, F. v. Mueller
- "          "          *indivisa*, Kunth
- "          "          *Yucca gloriosa*, L., and *Y. filamentosa*, L.
- "          "          *Linum usitatissimum*, L.
- "          "          *Fourcroya gigantea*, Vent.
- "          "          *Doryanthes excelsa*, Corr.
- "          "          *Agave Americana*, L.
- "          "          *Hibiscus Syriacus*, L.
- "          "          *splendens*, Fras.
- "          "          *Pimelea pauciflora*, Br.
- "          "          *microcephala*, Br.
- "          "          *Arundo conspicua*, Forst.
- "          "          *Donax*, L.
- "          "          *Canna edulis*, Edw.
- "          "          *Abutilon venosum*, Hooker
- "          "          *striatum*, Dicks.
- "          "          *Dianella longifolia*, Br.
- "          "          *Brachychiton populneum*, Br.
- "          "          *Broussonetia papyrifera*, Vent.
- "          "          *Iris compressa*, Thunb.
- "          "          *Phormium tenax*, Forst. var. *Colensoi*
- "          "          *Boehmeria nivea*, Gaudich
- "          "          *Antholyza Æthiopica*, L.
- "          "          *Pipturus propinquus*, Wedd.
- "          "          *Juncus vaginatus*, Br.
- "          "          *Sisyrinchium paniculatum*, Br.
- "          "          *Sida retusa*, L.
- "          "          *Phragmites communis*, Trin.
- "          "          *Anigosanthus flavidus*, Redoute
- "          "          *Plagianthus pulchellus*, Gray
- Oil distilled from *Rosmarinus officinalis*, L.
- "          "          *Melaleuca ericifolia*, Sm.
- "          "          *Eucalyptus diversicolor*, F. v. Mueller
- "          "          "          *polyanthemos*, Schauer
- "          "          "          *calophylla*, Br.
- "          "          "          *platypus*, Hooker
- "          "          "          *Stuartiana*, F. v. Mueller
- "          "          "          *goniocalyx*, F. v. Mueller
- "          "          "          *cornuta*, Labillard.
- "          "          "          *melliadora*, A. Cunningham.

Oil distilled from *Agonis flexuosa*, Candolle.

" " *Lavandula Stoechas*, L.

" " *Mentha piperita*, L.

" pressed from seeds of *Papaver somniferum*, L.

" " *Helianthus annuus*, L.

" " *Brassica oleracea*, L.

" " *Linum usitatissimum*, L.

" " *Prunus Amygdalus*, Hook.

" " *Pricinus communis*, L.

Tar from *Pinus Laricio*, Poiret

" " *pinaster*, Soland.

" " *pinea*, L.

" " *insignis*, Dougl.

" " *longifolia*, Roxb.

" " *Halepensis*, Miller

" *Cupressus macrocarpa*, Hartw.

" *Bursaria spinosa*, Cavan

" *Myoporum insulare*, Br.

" *Casuarina quadrivalvis*, Labill.

" *Banksia marginata*, Cavan

" *Acacia melanoxylon*, Br.

" " *decurrens*, Willd.

" *Melaleuca ericifolia*, Sm.

" *Angophora intermedia*, Cand.

" *Eucalyptus leucoxyton*, F. v. Mueller

" " *obliqua*, l'Herit.

" " *globulus*, Labill.

" " *rostrata*, Schlecht.

" Wood Vinegar, residue of *Eucal. globulus*, Lab.

Eight small boards coated with different tars

Acetic Acid from *Casuarina quadrivalvis*, Labill.

" " *Banksia marginata*, Cavan

" " *Acacia melanoxylon*, Br.

" " *Acacia decurrens*, Willd.

" " *Melaleuca ericifolia*, Sm.

" " *Angophora intermedia*, Cand.

" " *Eucalyptus leucoxyton*, F. v. Mueller

" " " *obliqua*, l'Herit.

" " " *globulus*, Labill.

" " " *rostrata*, Schlecht.

Alcohol, 10 samples from the preceding 10 kinds of wood

Galls from *Acacia pyrenantha*, Bentham

" " *acinacea*, Lindl.

" " *decurrens*, Willd.

Hops from *Humulus lupulus*, L.

Nuts from *Helicia ternifolia*, F. v. Mueller

Tea from *Thea Chinensis*, Sims.

" " " var. *Assamica*

Medicinal Bark of *Pimelea serpillifolia*, Br.





- Truffle from *Mylitta Australis*, Berk.  
 Kino from *Eucalyptus viminalis*, Labill.  
 Crude Potash from *Eucalyptus viminalis*, Labill.  
 " " " *rostrata*, Schlecht.  
 " " " *Dicksonia antarctica*, Labill.  
 Starch from grains of *Andropogon saccharatus*, Roxb.  
 " " roots of *Rumex bidens*, Br.  
 " " " *Typha Muelleri*, Rohrbach  
 " " " *Ipomoea Batatas*, Poir  
 " " " *Scirpus maritimus*, L.  
 " " " *Canna edulis*, Edw.  
 Acetate of Soda from *Eucalyptus globulus*, Labill.  
 Acetate of Lime from *Eucalyptus globulus*, Labill.  
 Paper from Bark of *Pimelea microcephala*, Br.  
 " " *Eucalyptus goniocalyx*, F. v. M.  
 " " " *globulus*, Labillard.  
 " " " *corymbosa*, Smith  
 " " " *amygdalina*, Labill.  
 " " " *Stuartiana*, F. v. Mueller  
 " " " *rostrata*, Schlecht.  
 Aloe by exudation from *Aloe soccotrina*, L.  
 " pressing " "  
 " boiling " "  
 " pressing " *plicatilis*, Mill  
 " " " *saponaria*, Haw.  
 " " " *arborescens*, Mill  
 Pitch from *Pinus insignis*, Dougl.  
 " " *Halepensis*, Mill  
 Catechu from *Acacia decurrens*, Willd.  
 " " " *var. dealbata*, Link.  
 " " " *saligna*, Wendl.  
 " " " *pycnantha*, Benth.  
 Sandarac from *Callitris verrucosa*, Br.  
 Gum from *Acacia homolophylla*, A. Cunn.  
 " *Brachychiton populneum*, Br.  
 Lerp Manna from *Eucalyptus oleosa*, F. v. Mueller  
 Opium from *Papaver somniferum*, L.  
 Safflower from *Carthamus tinctorius*, L.  
 Sumach from *Rhus coriaria*, L.  
 " " *glabra*, L.  
 " " *typhina*, L.  
 Scotino from *Rhus Cotinus*, L.  
 Young fustic of *Rhus Cotinus*, L.  
 Salep of *Microtis media*, Br.  
 Snuff of *Myriogyne minuta*, Less.  
 Liquorice root of *Glycyrrhiza glabra*, L.  
 Cigars from leaves of *Eucalyptus globulus*, Lab. (six sorts  
 under Ramel's patent)  
 Fluid Kino of *Eucalyptus obliqua*, l'Herit.



Varnish from Resin of *Xanthorrhoea Australis*, Br. and  
 Alcohol of *Euc. globulus*  
 Saponin of *Albizzia lophantha*, Benth.

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**CUMING, SMITH & CO.**, 102 Collins-street West, Footscray Chemical Works.

577 Glass Case, with samples of Chemical Manufactures

**FORD, WM., & CO.**, 67 Swanston-street.

578 Chemicals and Pharmaceutical Preparations

**FRANCIS, HENRY**, 31 Bourke-street East.

579 Pharmaceutical Preparations

**FLETCHER, PRICE**, Salt Manufacturer, Western Port, and 11 Market-street.

580 Salt extracted from Sea Water, for Curing and general purposes

581 Salt similarly Evaporated for medical purposes, for Salt-water Baths

**FORBES, JAMES**, Falls Bridge, Yarra Bank, Emerald Hill.

582 Pitch made by Tar, Brunswick Black, Asphalte Oil distilled from Resin, Spirits of Tar, Fire Kindlers, Crude Carbolic Oil

**GRAHAM, GEO. L.**, Graham-street, Sandridge.

583 Extraction of Oils and Fats by Bisulphide of Carbon; samples of Flax, Rape, Radish, Sunflower, and Peanut Seeds—the oils and feeding products extracted therefrom. Also, Animal Refuse of Meat-preserving Works, the Tallow completely extracted and the manure rendered inodorous for export. Bisulphide of Carbon, and materials for its manufacture.

**HEATHER, E. D.**, 33 Queen-street.

584 Randerson's Podophyllin Lozenges, for Biliousness, &c.; Honey Balsam, for Colds, &c.; Philoment, for Toothache; and Poisoned Wheat, for destruction of Rats

**KEOGH, E. & M.**, 11 & 13 Latrobe-street.

585 Chemicals

**LAY, JOHN**, 21 & 23 Madeline-street, Carlton.

586 Collection of Dog and Cattle Medicines; Insecticide, for Fleas, Bugs, Beetles, and all kinds of Vermin

**M'MILLAN, PETER**, 339 Wellington-street, East Collingwood.

587 Washing Crystals, in packages and in bulk; Wool-washing Crystals, in glass; Toilet Powder, and Water for Toilet purposes; two kinds of Soap and Wool washed by same

**WILLIAMS & CO.**, 13 Flinders-lane West.

588 Chemicals





## CLASS II.—DRYSALTRY.

## EXPERTS:

T. Lambert, Esq. | C. Newbery, Esq. | — Kaufmann, Esq.

BOARDMAN, PIERCE, Box Hill, Nunawading.

589 Essential Oil

DICKSON, JAMES, Franklyn-street, Melbourne.

589A Anti-saline Emollient Blacking

EVE, JOHN SAM., 171 Bourke-street East.

590 Hair Dye

HAYES, P., Footscray.

591 Stearine Candles

HEWITT, J. T., Beechworth.

591A Household Soap

HOLDSWORTH, J., Sandhurst.

592 Myall Gum, remarkable for its being free from unpleasant taste or smell; obtainable in large quantities in the months of June and July at Euston, Murray River District, N.S.W.

KELSALL, JOHN, 47 Main-street, Ballarat.

593 112 lbs. Yellow Soap, 112 lbs. Blue Mottled Soap, 14 lbs. Tallow Candles

594 Fancy Pedestal and Vase, in Blue Mottled Soap

KISSLEY GEORGE, Chowar.

595 Bottle of Oil extracted from a Murray Fish

KITCHEN, J., &amp; SONS, 28 Flinders-lane West.

596 Stearine and Stearine Candles

LAMBERT, W. J., &amp; CO., Russell-street.

597 Samples of Australian Rubber (*ficus macrophylla*), and Australian Rubber Stamp

LUCAS, ROBERT, Colac.

598 Parcel of Grasstree Gum, in crude state

599 " " mechanically prepared, in bottle

600 The Grasstree Plant, trimmed

601 " " in natural state

MALLET, JAMES, Albert-street, Windsor.

602 Blacking and Ink

MUIRHEAD, JAS., Flemington Bank.

603 Animal Oils

NEWING, T. R., 114 Elizabeth-street.

604 Gluene Cement

SIMPSON, J. J., 14 Barkly-street, Carlton.

- 605 Chemical Soap, Victorian China Cement, Chemically Prepa  
Liquid Glue

TAYLOR, PETER ROBERT, Flemington Bank.

- 606 Stearine Candles and Stearine

TILLY & CLACK, Surrey-road, South Yarra.

- 607 Toilet Soaps, Perfumery, Blacking

VICTORIA STEARINE WORKS, Flemington Bank—C. W. Hugl  
Manager.

- 608 Pure Stearine Candles

VICTORIA VARNISH CO., 36 Market-street—Borthwick and Au  
Managers.

- 609 Varnishes for various purposes, and Panel showing same

- 610 Anti-Fouling Composition, for Ships' Bottoms, &c.

- 611 Japan Paint, for various purposes

- 612 Show Case showing Names of Ships and Steamers Painted by t  
Process

VOCKLER, JOHN, Tannery, Footscray.

- 613 Glue

WALKER, FREDERICK, Preston.

- 614 Colonial Glue

WENER, CHARLES, 60 Little Collins-street East.

- 615 Indiarubber-work

WILSON, A., 58 Temple Court, Melbourne.

- 1418 Kauri Gum, and Ornaments made from the Gum

### CLASS III.—GROCERIES.

#### EXPERTS:

W. Hogarth, Esq.  
G. Shaw, Esq.

J. Benn, Esq.  
The Hon. E. Cohen

J. D. Rankin, Esq.  
George Lyell, Esq.

AGNANI, AUGUSTE, Dunolly.

- 616 Cake Extract of Tomatoes

- 617 Half-dozen White Wine Vinegar

FORDHAM, FRANK, 241 Swanston-street.

- 618 Pickles, Sauces, and Oilmen's Stores

GUTHEIL, BUTTNER & CO., Standard Vinegar Works, Chapel-street,  
Prahran.

- 619 Several kinds of Vinegar

HARRIS, RICHARD S., Liebig-street, Warrnambool.

- 620 Gooseberry, Damson, Yellow Gage, and Orleans Plum Jam





LEVI, NATHANIEL, 32 Collins-street West.

- 621 Samples of Beetroot Sugar, first made in Victoria by diffusion process, under Patent, from Beet at Staughton Vale, Anakies

LEWIS & WHITTY, Charles-street, Fitzroy.

- 622 Diamond Oil Blacking, Washing Powder, Baking Powder, Ball Blue, Knife Powder, Hair Oil, Hair Restorative, &c.

LYON, GEORGE, Beechworth.

- 623 Ginger Wine and Raspberry Vinegar

TRUSTEES OF INDUSTRIAL AND TECHNOLOGICAL MUSEUM.

- 624 Sugar Making—Diagrams illustrative of the Manufacture of Beetroot Sugar

MARSANO, N. F. M., Twist's Creek, Beechworth.

- 625 Orange Marmalade, Orange Jam, Quince Marmalade, from Oranges grown in exhibitor's garden

MICHEL, L. J., Flinders-street East, Melbourne.

- 625A Victorian Digestive Sauce

MILWARD, JAMES, High-street, St. Kilda.

- 626 Jams, Jelly, and Marmalade.

REID, HENRY, 235 Simpson's-road.

- 627 Malt and Wine Vinegars

SHAW, MRS., Public Library.

- 628 Half-dozen pots of Jam

STRACHAN & MINTER, Victoria Brewery, South Yarra.

- 629 Colonial Malt Vinegar

STRINGER & CO., 43 & 45 King-street, Red Lion Works.

- 630 Pickles, Sauces, and Condiments

TONG & HURST, 220 Napier-street, Fitzroy, and 4 Western Market.

- 631 Bottles of Worcester Sauce

WILSON, WILLIAM, John and Bell streets, Fitzroy.

- 632 Baking Powder

ZORN, EDWARD, Oakleigh.

- 633 Tomato and other Sauces.

CLASS IV.—PREPARATIONS OF FOOD.

EXPERTS:

W. Ford, Esq.  
The Rev. J. I. Bleasdale  
Captain Jones  
Dr. Motherwell]

Dr. Gilbee  
W. G. Murray, Esq.  
Dr. Blair  
J. Benn, Esq.

— Crisp, Es  
L. A. Moody, Esq  
Dr. Girdlestone  
Hon.

AUSTRALIAN MEAT-PRESERVING COMPANY (LIMITED),

THOS. F. CLARK, Manager, Market Buildings, Melbourne.

- 634 Preserved assorted Meats on a sideboard



**BALLARAT MEAT-PRESERVING COMPANY, T. S. CLIBBORN, Sec.,  
Ballarat.**

**635 Varieties of Preserved Meats**

BENNETT, THOMAS KNIGHT, 115 & 117 Bourke-street East,  
Melbourne.

**636 Preserved Meats (Corned Beef, Spiced Beef, Boiled Beef, Boiled  
Mutton, Potted Head)**

GARDINER & HURST, Fitzroy.

**637 Three tins of Preserved Milk**

GEELONG MEAT-PRESERVING COMPANY, E. H. COLE, Sec.,  
Geelong.

**638 Preserved Meats**

HARRISON, JAMES, 3 Earnbank-terrace, Carlton.

**639 Fresh Meat, frozen and packed as if for a voyage, so that the  
refrigerating process may be continued for any required  
period. By this process, the inventor states, the hold of a  
ship can be filled with the carcasses of sheep and cattle, which  
are frozen in the act of being stowed. The expense of freezing  
500 tons before starting will be £100, and of keeping the cargo  
in a frozen state during a voyage of three months, £75; or  
seven shillings per ton in all.**

HAYES, P., Footscray.

**640 Preserved Meats, preserved at Footscray**

MELBOURNE MEAT-PRESERVING COMPANY, S. S. RITCHIE,  
Manager, 56 Queen-street.

**641 Preserved Meats**

**642 Neatsfoot Oil, in glass bottles**

**643 Trotter Oil „**

**644 Finest Mutton Tallow „**

**645 Finest Beef „**

**646 Clarified Marrow „**

**647 Superior Dripping for culinary purposes, in glass bottles**

MILLER, JOSEPH, care of GORDON & GOTCH, Collins-street West.

**648 Meat of any kind, or Fish preserved by dry process, for ships' and  
other uses**

MOUNT ARARAT MEAT-PRESERVING COMPANY, Ararat.

**653 Preserved Meats**

VICTORIAN MEAT-PRESERVING COMPANY, LIMITED, H.  
M'CRACKEN, Manager, W. G. SPRIGG, Secretary, 18 Market-street,  
Melbourne.

**649 Preserved Meats, and Soups**

**652 One cask Mess Beef**





**WESTERN MEAT-PRESERVING COMPANY, THE, LIMITED,**  
Colac, C. M. FARRINGTON, Manager.

- 654 Preserved Meats, consisting of Beef, Rabbits, Kangaroo, Game, and Poultry

YOUNGBALL, MRS., 28 Gray-street, East Melbourne.

- 552A Meat Preserved by Hawkesford's Patented Process.

BATES, C. F., 243 Albert-street, East Melbourne.

- 655 Cocoa, Chocolate, and Mustard

BENCRAFT, GEO., & CO., Flinders-lane West.

- 656 Oatmeal, Pearl Barley, Maize Meal, Rice and Flour, Prepared Groats, Rice Flour in show case

BLOORE, ANNIE, 3 Albert-terrace, Albert-street, East Melbourne.

- 657 New Farinaceous Food for Infants and Invalids

BURSTON, SAMUEL, & CO.

- 658 Two exhibits of Chevalier Malt

- 659 One exhibit of Black or Patent Malt

COOPER & PAYNE, Saltwater River Meat-Preserving Works.

- 660 Various Meats, preserved by patent syphon process ; and uncooked Meats, by the patent vacuo package process

DURNANE, PATRICK, Camp-street, Beechworth.

- 661 Sample of Malt, manufactured at Beechworth Brewery, Camp-street

EVANS, D. H.

- 662 Four Bags of Flour, 50 lbs. each

FYNN, JOHN, & CO., Kilmore.

- 663 Malt made from Barley grown in the Lancefield district

HAGENAUER, REV. F. A., Aboriginal Station, Lake Wellington, Gipps Land.

- 664 Arrowroot, grown and manufactured in the "Ramahyuck Mission," the first produce of the kind grown and manufactured in the colony

HARPER, ROBT., & CO., 5 Flinders-street East.

- 665 Samples of Coffee, Chicory, Spirit, Oatmeal, Pearl Barley, Rice, &c.

MATTHEWS, WILLIAM, Coghill's Creek.

- 666 One box of Malt

M'KENZIE, JAS. F., 3 & 6 Queen-street

- 667 Coffee, Chicory, Pepper, Spices, Oatmeal, Groats, Maize Meal, Pease Meal, Pearl Barley, Split Peas, Cocoa, Chocolate, and Mustard

MILLER, JOS. G., care of Gordon and Gotch, Collins-street

- 668 Valparaiso Squash Pumpkin, for ship and other use

- RAMSDEN, GEORGE, Carlton Flour Mills.  
 669 Two Bags Flour  
 WILLIAMS, SAWTELL, Beechworth.  
 670 Arrowroot  
 STEWART & CO., Hawthorn Bridge, Richmond.  
 671 Maizena and Patent Starch, Double Refined
- 

### CLASS V.—CONFECTIONERY.

- CLEMENTS, TOBIAS, 56 & 58 Swanston-street.  
 672 Bride Cake and Savoy Cakes, ornamented  
 GUEST, T. B., & CO., William-street.  
 673 Stand of Biscuits  
 SMITH & SON, 102 Lonsdale-street East.  
 674 Charcoal Biscuits
- 

### SECTION V.—ROPE AND BRUSHWARE.

A FEW samples of the paper made at Ramsden's paper mills on the banks of the Yarra form a very interesting exhibit. They show what enterprise is doing for the colony, and what it will yet further do. At these mills about one hundred hands are employed, and all descriptions of paper, printing and news papers, with wrapping papers of all colours, are made all the year round. This is shortly to be followed by the opening of other paper mills in the same neighbourhood, for which the necessary plant and machinery have been provided. But it will be long before paper enough will be manufactured here to shut out the imported article. Not so, however, with ropes and cordage. These are being manufactured to a very large extent in the colony, and the exhibits forwarded show the excellent quality of the articles produced. Millet is also being grown largely, and converted into good colonial brooms, of which samples are on view. These form a very good substitute for the American brooms, which were at one time so much in use here. To these are added soiled linen baskets, coir matting, and dusters. In short, little or nothing appears to have been omitted.

Instead of depending, as it once did, on others for the whole of its manufactured articles, the colony is being fast turned into a hive of busy manufacturing industry, and employment will thus be readily found for its rapidly-increasing population.

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- BANNER, R. G., 70 Elgin-street, Carlton.  
 675 Broom and Dusters manufactured from Millet of colonial growth  
 BARKER, EDMUND, Beechworth.  
 676 Millet Seed and Millet Straw, grown at Whorouley, near Beechworth





- '7 One dozen Millet Brooms

BARKER, LOT, Beechworth.

- 8 One dozen Millet Brooms, manufactured from Millet grown by exhibitor

DONAGHY, MICHAEL, Geelong.

- 9 Rope and Cordage

EVANS, T., 2 & 4 Bourke-street West.

- 0 Refrigerators (Canvas), Tents, Tarpaulins, Flags, Buckets, &c.

FISH, WILLIAM, Cape Schanck Lighthouse.

- 1 Two Blocks (500 sheaves in each) and 370-fathom Rope

INGLIS, DANIEL, 123 Flinders-street West.

- 7 Galvanised Wire Rope, English Manufacture

M'NALLY, JOHN, Sydney-road, Brunswick.

- 2 Rope from Manila Hemp; do from New Zealand Flax; Twine from South Australian Flax; do from Manila Hemp; and Sash Cord from Italian Hemp

MILLER, JAMES, & CO., 61 Flinders-street West.

- 3 Hemp and Rope

MOORHOUSE, THOMAS, Ashby, Geelong.

- 4 Coir Matting

MURDOCK, JOHN, JUN., Ascot Vale.

- 5 Halter (woven), pair Plough Reins, 2 Clothes Lines, Garden Lines

NAL ESTABLISHMENTS, INSPECTOR-GENERAL OF, MELBOURNE.

- 6 Coir Matting, 2 rolls

PETTITT BROTHERS, 5 Post-office Place.

- 7 Soiled-linen Basket

- 8 Pic-nic Basket

RAMSDEN, GEORGE, Prince's Bridge.

- 9 Five Reams of Paper

SHARP, JAMES, & SONS, Malvern.

- 0 One dozen Manila Lines

- 1 One Coil each 1-inch and 1½-inch Manila Rope

- 2 One dozen New Zealand Lines

- 3 One Coil each ¾-inch and 1½-inch New Zealand Rope

- 4 Two pairs Plough Reins

- 5 Hank of Rein Cord

- 6 Hank of Huntsman's Cord

- 7 Six Balls Twine

(All made from South Australian Flax.)



SHAW, ALFRED, & CO., 13 Little Collins-street West.

698 Three Colonial Brooms

TRUSTEES OF INDUSTRIAL AND TECHNOLOGICAL MUSEUM.

699 Brushware—Two cases showing Woods and Fibres employed in manufacture of Brushware, presented by J. Zevenboom

699A Fibre for Rope-making; Cordage, Rope, Twine, and Spun yarn for Gas Pipes; Handkerchief, made by native women in Philippine Islands from fibre of the leaves of the Pineapple plant; Fiji Cloth

ZEVENBOOM, JOHN, 12 A'Beckett-street West.

700 Brushware

ZEVENBOOM, W., 17 Little Lonsdale-street West.

701 Brushware

SECTION VI.—WINES, BEER, &c.

CLASS I.—WINE.

EXPERTS:

Mr. Justice Barry  
W. Bailey, Esq.  
Col. Rede  
J. B. Were, Esq.  
F. W. Haddon, Esq.  
D. S. Campbell, Esq.

Dr. Bleasdale  
Dr. Gillbee  
— Hammond, Esq.  
W. H. Wright, Esq.  
R. B. Gibbs, Esq.

Col. Stephens  
J. A. Panton, Esq., P.M.  
Hon. J. F. Sullivan  
Dr. Jonasson  
E. Klingender, Esq.

THE various districts of Victoria in which the vine has been cultivated to any considerable extent are pretty fairly represented in the Exhibition, in regard to both the number and variety of the samples sent in.

Taking the districts alphabetically, we find that Ararat is represented by only two growers, Messrs. Best, and the firm of Trouette and Blanchard, whose exhibits are in all twelve. From Beechworth district seven growers have sent sixteen samples of their produce. Six vineyards in the Castlemaine district, including the Loddon, Hepburn, and Dunolly, contribute 25 samples. Echuca is largely represented by one gentleman only—Mr. Vetter. Geelong, the oldest wine district, is poorly represented by the produce of three vineyards, the total of exhibits being eleven.

Three vineyards in the Goulburn send nine samples. Melbourne district, comprising most of the vineyards south of the Dividing Range, is better represented now than on any former occasion, there being eleven exhibitors, and 35 samples.

The Murray district proper, as distinguished from Beechworth, sends fifteen samples, from three vineyards. Sandhurst district is fairly represented by 28 samples, the produce of eight vineyards.

As to the ages of these vines, there are but nineteen over four years—the great bulk being under three years. So far as can yet be known from the appearance of the wine in the bottles, and the manifest care and attention shown in the “get-up” and finish of them, they are a vast advance on nearly all exhibits heretofore sent to be displayed and judged





in Melbourne. It is to be hoped that the opinion of the experts invited to examine them will be early made known, and prove favourable.

We may here add, in conclusion, that these experts have been selected from amongst gentlemen of known experience in wines, suitable not only for home consumption in Victoria and the neighbouring colonies, but for ships' stores, and for exporting to Great Britain and the East Indies, as well as for the special requirements of hospitals, and medical restoratives.

## ARARAT DISTRICT.

Grower—JOSEPH BEST. Locality—Great Western.

Name of variety or varieties of Grapes.	Age of Wine—years.	Color.	Character—whether light, full-bodied, sweet, &c.	Information as to Soil, Aspect, &c.
702 Muscat, Chasselas, Tokay ...	1	white	light & dry	sand, gravel, and clay
703 Burgundy and Black Pineaux	1	red	light	„
704 White Hermitage, Chasselas, and Reisling ...	1	white	light & dry	„
705 Hermitage and Frontignac ...	2	red	light	„
Growers—TROUETTE AND BLANCHPIED. Locality—Great Western.				
706 Black Cluster ...	1	red	full-bodied	sand and clay
707 Mixed ...	1	red	light	„
708 Reisling ...	2	white	full-bodied	„
709 Chasselas ...	2	white	light	„

## BEECHWORTH DISTRICT.

Growers—F. G. AND J. B. DOCKER. Locality—Wangaratta.

710 Shiraz and Malbec	5	red	medium	red loam, plain
711 Reisling ...	3	white	medium	„
712 Shiraz ...	2	red	full-bodied	„

Grower—HENRY EVANS. Locality—Beechworth.

713 Shiraz ...	1	white	full-bodied	chocolate clay
714 Mixed ...	1	red	full-bodied	

Grower—J. P. JAMIESON. Locality—

715 Mataro ...	...	red		
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Grower—WILLIAM M'DONALD. Locality—North Wangaratta.

715 Mataro, Grenache, and Carignan	6	red	full-bodied, sweet	red sandy loam
716 Brown Muscat ...	5	brown	full-bodied, sweet	„

Grower—COWAN PATON. Locality—Three-mile Creek.

718 Reisling ...	2	white	light	light chocolate soil
719 Burgundy ...	2	pink	light	„
720 Shiraz ...	2	red	full-bodied	„

- Grower—CURTIS REID. Locality—Tarrawingee.
- 721 Reisling ... 2 white full-bodied red loam, iron and lime stone, aspect N.E., slope 1 in 20 $\frac{1}{2}$
- 722 Tinta ... 2 red full-bodied "
- Grower—GEORGE SPINK. Locality—Tarrawingee.
- 723 Reisling... 1 white full-bodied sandy creek
- Grower—JAMES WEBSTER. Locality—Beechworth.
- 724 Verdeilho ... 1 white full-bodied silurian, rich red, 2000 feet level

## CASTLEMAINE DISTRICT.

- Grower—WILLIAM BOTTEN. Locality—Loddon River.
- 725 Shiraz ... 3 red full-bodied sandy loam, N.E. aspect
- 726 Shiraz ... 4 dark full-bodied "
- 727 White Hermitage 1 white light "
- Grower—FABRIZIA CRIPPA. Locality—Hepburn.
- 728 Burgundy ... 1 red full-bodied chocolate soil, hill side, N.W. aspect
- 729 Hermitage ... 2 red light "
- Grower—OTTO JUNG. Locality—Chinaman's Creek.
- 730 Hermitage ... 1 red full-bodied red clay and slate E. aspect
- 731 Cluster and Frontignac ... 1 red medium "
- 732 Roussette ... 1 white full-bodied "
- 733 Hermitage ... 3 red full-bodied "
- Grower—FRANCIS MELLON. Locality—Dunolly.
- 734 Muscat ... 2 red
- 735 Pineau ... 2 red
- 736 Pineau ... 1 red
- 737 Esparte... 2 red light-bodied
- Grower—THOMAS MEREDITH. Locality—Chewton.
- 738 Shepherd's Reisling 3 white light clay, slate, and sandstone
- 739 Shepherd's Reisling, Mataro, Grenache, and Canignan ... 5 red light "
- 740 Hermitage, Carignan, and Black Cluster ... 5 red full-bodied "
- 741 Tokay ... 4 white full-bodied "
- 742 Tokay ... 2 white full-bodied "
- 743 Hermitage ... 3 red full-bodied "





Grower—EHRENFIELD SCHROEDER.				Locality—Chinaman's Creek.	
4	Hermitage and Carbinet	... 2	red full	slate, sandstone, and clay; E. aspect, 1050 feet elevation	
5	Mataro	... 1	red medium	"	
3	Chasselas	... 2	white full	"	
7	Reisling	... 1	white full	"	

## ECHUCA DISTRICT.

Grower—JOHN VETTLER.				Locality—Echuca.	
3	White Morrillon	1	white light	sandy soil, slightly elevated, E. aspect	
3	Verdeilho	... 1	white full-bodied	"	
1	Mueller's Burgundy	... 1	red full-bodied	"	
1	Gouais	... 1	white light	sandy soil, flat land, E. aspect	
2	Hermitage	... 3	red full-bodied	sandy soil, slightly elevated, E.	
3	Gloria of Australia	1	red full-bodied	sandy soil, flat land, E.	
1	Mueller's Burgundy	... 2	red full-bodied	,, elevated, E.	
5	Mataro	... 1	red light	,, with loam and clay flat, E.	
5	Sherry	... 1	white light	sandy soil, elevated, E.	
7	Carbinet Savignon	1	red full-bodied	,, flat E.	
3	Hermitage	... 2	red full-bodied	,, elevated, E.	
3	Grenache	... 2	red full-bodied	,, with clay flat, E.	
1	Reisling	... 1	white light	sandy soil, flat, E.	
1	Sherry	... 2	amber full-bodied	sandy soil, elevated, E.	

## GEELONG DISTRICT.

Grower—JACOB DEPPELER.				Locality—Gheringhap.	
2	Reisling	... 2	white light	sandy clay, limestone botto	
3	Hermitage and Burgundy	... 1	dark light	"	
1	White Hermitage	1	white full-bodied	sandy clay, limestone bottom, E. aspect	
3	Hermitage	... 2	dark full-bodied	"	
Grower—R. C. HOPE.				Locality—Lynnburn.	
	Hermitage	... 2	red light	black soil	
	Reisling and Gouais	... 1	white light	sandy and gravelley	
	Hermitage	... 1	red light	black soil	
	Reisling	... 1	white		
1	Hermitage	... 2	red		



Grower—JACOB WEBER.				Locality—Leigh Road.	
771	Hermitage	... 1	red	full-bodied	sandy loam, limestone bottom
772	Chasselas	... 1	white	full-bodied	"

## GOULBURN DISTRICT.

Grower—EDWARD L. ROBINSON.				Locality—Goulburn Valley.	
773	Burgundy with Hermitage	... 1	red	medium	plain red soil
Grower—F. B. SEIDD, for Proprietors of Tabilk Vineyard.				Locality—near Seymour.	
774	Malbec...	... 1	red	light claret	sandy loam, decomposed old red sandstone, level but undulating
775	Piedro Ximenes	1	white	between light and full-bodied	"
776	Reisling	... 1	white	full-bodied	"
777	Verdeilho	... 1	white	full-bodied, sweet	"
778	Hermitage	... 1	red	full-bodied	"
779	Muscat	... 1	pink	full-bodied, sweet	"
780	Carbinet Savignon	1	red	full-bodied, claret	"

Grower—FREDERICK EGLI.				Locality—Tabilk.	
781	Hermitage	... 1	red	full-bodied	red chocolate, flat but dry

## MELBOURNE DISTRICT.

Grower—THOMAS BARRETT.				Locality—Coburg.	
782	Hermitage	... 5	dark	full-bodied	black soil, E. aspect
783	Miller's Burgundy	5	ruby	full-bodied, sweet	"
784	Mixed	... 5	light	sweet	"
785	Verdeilho	... 5	light	light	"
Grower—HUBERT DE CASTELLA.				Locality—Yering.	
786	Chasselas	... 3	white	light	rich loam, claysubsoil
787	Hermitage	... 3	red	light & dry	"
788	Savignon	... 1	red	full-bodied	"
789	Brandy	...			
Grower—WALTER CLARK.				Locality—Bulla.	
790	Blanc	... 2	white	light	loamy volcanic
791	Verdeilho	... 1	white	light	
792	Reisling	... 1	white	light	





Grower—JOHN DAVIS.				Locality—Moonee Ponds.
ious	...	3	white light	gravelly & volcanic, E. aspect
ious...	...	3	red light	"
Grower—JOHN FOY.				Locality—Boroondara.
mitage	...	2	purple light	loam and gravel, clay bottom, S.E. aspect
gundy	...	4	red light	"
ay	...	3	straw light	"
Grower—J. G. FRANCIS.				Locality—Sunbury.
sselas	...	3	white light	great variety of soil, sloping, W. aspect, 700 to 800 feet level above sea
ais	...	3	white full-bodied	"
deilho	...	4	white full-bodied	"
aro	...	3	red light	"
mitage	...	5	red full-bodied	"
mitage	...	6	red full-bodied	"
Grower—J. S. JOHNSTON.				Locality—Sunbury.
leilho	...	3	white full-bodied	chocolate on claysub- rich wine soil, 700 feet above sea, W. aspect
mitage	...	3	red full-bodied, dry	"
ed, principally eisling	Shepherd's			3 white light "
Grower—CHARLES MAPLESTONE.				Locality—Ivanhoe.
ge and small eisling	4	white light		sandy loam, S.W. as- pect
ge and small eisling	3	white light		"
mitage	...	2	ruby red light	"
Grower—FRANZ SCHMIDT.				Locality—Berwick.
sling	...	4	white full-bodied	stiff black clay, N.W. aspect
sling	...	3	white full-bodied	"
sling	...	6	white full-bodied	"
Grower—JACOB SCHNEIDER.				Locality—Nunawading.
mitage	...	2	black light	[marly, N. aspect
sling	...	3	white rather full	"
Grower—F. B. SIEDEL.				Locality—Yan Yean.
ed, chiefly weet Water d Pineau lanc	25	white dry		strong loam, N.W. aspect

## MURRAY DISTRICT.

Grower—JAMES T. FALLON. Locality—Albury.

817	Brown Muscat ...	8	brown	dry	red chocolate elevated land
818	Brown Muscat ...	3	brown	fruity	"
819	Shiraz ...	8	dark	medium	"
820	Carbinet ...	5	dark	fruity	"
821	Reisling ...	10	white	dry	"
822	Burgundy ...	5	dark	dry	"

Grower—AUGUSTUS MUELLER. Locality—Yackandandah.

823	Verdeilho and Madeira	2	white	dry & strong	chocolate over slate, N.E. aspect, sloping
824	Muscatel and Tokay	2	brown	sweet, full-bodied	"
825	Shiraz and Burgundy	2	red	full-bodied, sweet	"

Grower—JAMES SCOTT. Locality—Wahgunyah.

826	Reisling ...	3	white	dry	chocolate soil
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Grower—GEORGE S. SMITH. Locality—Wahgunyah.

827	Muscatel ...	3	red	sweet	light, sandy
828	Muscatel & Shiraz	3	red	sweet	"
829	Shiraz ...	3	red	light & dry	"
830	Shiraz ...	3	red	light & dry	"
831	Shiraz ...	3	white	light & dry	"

## SANDHURST DISTRICT.

Growers—BRUHN BROTHERS. Locality—Emu Creek.

832	Reisling & Pineau Blanc	6	white	light	sandy slope, N.W. aspect
833	Verdeilho ...	2	white	full-bodied	"
834	Pineau Blanc & Verdeilho	2	white	light	"
835	Hermitage ...	3	dark red	full-bodied, sweet	red clay slope
836	Carbinet Sauvignon	3	dark red	full-bodied, sweet	"
837	Reisling ...	3	white	light	"
Grower—H. K. FICK. Locality—Campaspe.					
838	Hermitage ...	1	red	full-bodied	loam, clay subsoil
839	Mataro ...	1	red	full-bodied	"
840	Chasselas ...	1	white	light	"

Grower—GEORGE WILLIAM GEYER. Locality—St. Arnaud.

841	Claret ...	1			
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Grower—FREDK. GROSSE. Locality—Strathfieldsaye.

842	Carbinet Sauvignon	2	red	light	loam and gravel
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Grower—AUGUST HEINE.				Locality—Sheepwash.	
1	Reisling	... 4	white	light	black soil, N. aspect, 550 feet above sea
	Hermitage	... 3	red	full-bodied	"
	Mataro ...	... 4	red	light	"
	Reisling	... 3	white	full-bodied	"
Wines—HEINE AND GRIFFENHAGEN.				Locality—Strathfieldsaye.	
	Verdeilho	... 3	white	full-bodied	sandy loam, red clay subsoil, E. aspect
	Reisling	... 1	white	light	"
	Chassellas	... 1	white	light	"
	Hermitage	... 3	red	full-bodied	"
	Hermitage	... 1	red	full-bodied	"
	Carbinet Sauvignon	3	red	full-bodied	"
	Mataro ...	... 1	red	light	"
Grower—FREDERICK C. KLEMM.				Locality—Emu Creek.	
	Carbinet Sauvignon	4	red	full-bodied	red clay, rich subsoil, 800 feet above sea
Grower—CARL POHL.				Locality—Strathfieldsaye.	
5	Verdeilho	... 1	white	full-bodied	red clay
3	Hermitage	... 1	red	full-bodied	"
7	Mataro, Hermitage, Pineau Blanc	1	red	light	"
3	Verdeilho	... 2	white	full-bodied	
2	Hermitage	... 3	red	"	
0	"	... 3		"	
1	Carbinet and Hermitage	... 3	red	"	
2	Hermitage	... 1	"	"	
Grower—FREDERICK KINGSHAW.				Locality—Goorong, Murray.	
3	Hermitage	... 3	red	full-bodied	chocolate soil, sloping N. N.W. aspect
4	Sweetwater	... 3	white	"	"
Grower—JEAN MERLE.				Locality—Daylesford.	
5	Garnais	... 1	red	light	chocolate, sloping N.
6	"	... 2	"	full-bodied	"
7	"	... 2	"	"	"
8	"	... 2	"	"	"

## SECTION VI.—BEER, SPIRITS, AND OTHER DRINKS, AND TOBACCO.

### SECTIONAL COMMITTEE :

Hon. John O'Shanassy, Chairman.

1. Howard Spensley

| S. Ramsden, Esq.

| Geo. Benger, Esq.



## CLASS II.—BEER.

## EXPERTS:

W. Ford, Esq. | Hon. H. Spensley | Hon. T. H. Fellows | W. Morton, Esq.

THE growth in the manufacture of beer in Victoria during the last five years has been simply marvellous. No other word could be so fitly applied. Eighteen to twenty years ago, there was hardly such a thing as colonial beer known in Melbourne. Imported ale or beer only could then be had, and that cost the colony no less than £600,000 in 1860. Even eight to ten years ago, it was very difficult to get people to look at a hogshead of colonial ale, and the production and consumption were consequently small. Now all this is reversed, both as regards imported and colonial beer. Last year the declared value of imported beer was under £150,000, against £600,000 in 1860, or rather less than one-fourth, and the greater part of this was in bottle, not in cask. To fill up the wide margin between the amounts of the imports of beer at these two periods, the Victorian brewers had to exert themselves, and how far they did this may be gathered from the fact that they brewed no less than 13,000,000 gallons of beer last year, which was at once put in the market, and would at the lowest estimate be equal to £450,000, the sum of the difference between the imports of 1871 and 1860. At this rate of production, the colonial brewers will soon shut out all imports of beer, and have the trade to themselves. They have, in fact, already nearly done so, with regard to that imported in cask, which did not quite reach £40,000 last year; and they must eventually do so with regard to that imported in bottle, as they are now bottling what they brew themselves very fast, and some of them are using their own labels, Messrs. Vaughan and Wild, and Mr. Thomas Aitken, in particular. In this, they have begun to exhibit a becoming confidence in their own manufacture, nor was there any reason why they should not have done this long ago. Whether in cask or in bottle, their best beers will bear favourable comparison with the best English cask and bottled ales; and what is equally, if not more to the purpose, the consumers greatly prefer the colonial article, especially when they know, as they now may, from the labels, whose brew they are using. The colonial taste for beer has of late undergone a complete change. Everywhere the run is now on colonial beer, not on English. Consequently, only an odd cask of English ale is now anywhere to be seen in Melbourne, and much of the imported bottled beer is shipped away to the other colonies. Here they are thought less palatable than the light and sparkling colonial ales, and too heady. If there be any over-indulgence in English ale overnight, the penalty attached to this must be paid next morning. Not so with colonial ale. Samples of some of the best colonial ales have been forwarded to the Exhibition, and justify all that has now been said in reference to them as a whole. The best colonial ales are made from malt and hops alone, and some of the brewers never use anything else during the winter season. But a good deal of sugar is still used by most of the brewers for low-class ales, and a small quantity is thought to give an improved flavour to the higher. A considerable portion of the malt used is made by the brewers themselves; on their own





premises, from Victorian barley, and the rest is imported, chiefly from Tasmania and New Zealand. One house imports largely direct from Bavaria. But these imports will, no doubt, be checked by the 2s. duty imposed last year. That will lead to the growth of a larger quantity of Victorian barley, which, sample for sample, is, in the opinion of the most experienced brewers, fully equal to English barley for malting. The hops used in making colonial beer are Kent and Tasmanian, one-half of each, or, in some cases, two-thirds of the former to one-third of the latter. But there will be no more necessity for the importation of hops in the course of a few years than for the importation of barley or malt. Hops are growing freely in Gipps Land, the Kent of Victoria, and the supply will soon be equal to the demand. The actual proportions in which sugar, malt, and hops were used in the manufacture of the 13,000,000 gallons of colonial beer made last year, were these: Sugar, 8,869,209 lbs.; malt, 897,551 bushels; hops, 907,533 lbs. At most of the larger breweries in Melbourne, all the heavy work is done by steam, as also by some of those in the country. A very fair idea of the magnitude and growing importance of this branch of colonial industry may be formed from the following statistical facts, taken in connection with those already given: The number of breweries in Victoria last year was 126; the number of hands employed at them, 970; the number of horses, 695; the number of drays and waggons, 390. The capital invested in machinery and plant was estimated at £168,502; that invested in land, connected with these establishments, at £101,913; that in buildings, at £199,104. These sums added together make nearly half-a-million. But, with the stock-in-trade, the amount invested in these establishments probably far exceeds £1,000,000 sterling. A noble example of what can be achieved by patient industry and enterprise in the course of a few years.

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(The following are exhibited by the TRUSTEES OF THE INDUSTRIAL AND TECHNOLOGICAL MUSEUM, and form part of the collections of the Technological Museum.)

868 Three Vases Brewing Materials

AITKEN, THOMAS, Victoria Parade, East Melbourne.

870 2 hhds. Ale

871 1 case Porter

872 1 „ Ale

BILSTON—Beechworth.

872A  $\frac{1}{2}$  hhd Ale.

BOYD & HEAD, Shamrock Brewery, Webb-street, Fitzroy.

873 1 barrel of Ale

CLANCY, DANIEL, Stephenson-street, Richmond.

874 1 doz. bottled Ale

875 1 doz. „ Porter

COHN BROS., Victoria Brewery, Sandhurst.

876 2 hhds. Ale

COYLE & ANDERSON, Royal Mint Brewery, William-street.

877 2 hhds. of Beer

FITZGERALD, NICHOLAS, Castlemaine Brewery, Castlemaine.

878 2 hhds. Castlemaine Ale (A, Colonial Malt made of barley grown in the district, Tasmanian Hops; B, English Malt and Kent Hops)

HATFIELD BROS., Kent Brewery, Lennox-street, Richmond.

880 Stout, brewed from malt, English and Victorian, equal quantities Hops, two-thirds Tasmanian, one-third Sussex

881 Ale, brewed from Sugar and English Malt; Hops grown in Gipps Land, Victoria

HENNELLY, JAMES, Richmond Brewery, Richmond.

882 Two hhds. Ale

HUNTER, G. F., Kent Brewery, Sandhurst.

883 1 hhd. Ale

KIDSON BROTHERS, 41 Swanston-street.

884 4 dozen Warrnambool Bottled Ale

LATHAM, EDWARD, Carlton Brewery, Melbourne.

885 1 hhd. Porter, brewed from malt and hops

886 1 hhd. Ale

887 1 hhd. Ale " " " and sugar

LISTER, CHARLES, & CO., Crown Brewery, East Collingwood.

888 1 hhd. Ale, brewed from Hops and Colonial Malt

889 1 hhd. Ale " " Hops, Sugar, and Colonial Malt

890 1 hhd. Ale " " " " "

LYON, GEORGE, Spring Creek, Beechworth.

891  $\frac{1}{2}$  hhd. Ale

892 1 dozen Bottled Ale

MARTIN, P. J., Australian Brewery, Flinders-lane.

893 One hogshead Ale

894 Four dozen Porter

895 Two hogsheads Ale

896 Six dozen bottled Ale

897 Six dozen bottled Porter

M'CRACKEN, R., & Co., Little Collins-street West.

898 One hogshead Ale

899 One case bottled Stout





## MURTON &amp; LEGGO, Ballarat.

- 0 One hogshead of Ale, from malt, hops, and small quantity of sugar. The malt used in the manufacture was made by exhibitors from the Cape variety of barley grown in Ballarat district—Tasmanian hops

## POWELL, THOMAS, Little Malop-street, Geelong.

- 1 One hogshead Colonial Ale

AW, A. S. (Receiver in the estate of the late Thomas Graham), Simpson's-road Brewery, East Collingwood.

- 2 Two hogsheads XXXX Ale, brewed from Colonial and English malt, and hops grown in Tasmania

## SHELDRIK, WALTER, Warrnambool.

- 3 One case Ale, 4 dozen  
4 One case Porter, 4 dozen

## SHELDRIK, WALTER, &amp; CO., Warrnambool New Brewery.

- 5 One hhd. Crown Ale  
6 One hhd. Pale Ale

## TAEGETOW, FREDERICK, Osborne-street, Williamstown.

- 7 One dozen Porter, brewed 20th May, 1872, from English Malt and Hops only, no chemicals, bottled 29th August, 1872  
8 One dozen Ale, brewed 1st July, 1872, from English Malt and Hops only, no chemicals, bottled 16th September, 1872

## EACY, JOHN, &amp; CO., West End Brewery, Latrobe-terrace, Geelong.

- 9 One hhd. Ale

## VAUGHAN &amp; WILD, Smith-street, Collingwood.

- 0 One hhd. Ale. "Wild's Edinburgh Ale."

## VOLUM, JAMES, &amp; CO., Corio-street, Geelong.

- 1 Two one-dozen cases Bottled Ale, brewed (and bottled) by exhibitor from Malt, Hops, and Sugar  
2 Two one-dozen cases Bottled Stout, brewed (and bottled) by exhibitor from Malt, Hops, and Sugar

## WOOD, J., &amp; SON, Yorkshire Brewery, Collingwood.

- 3 Two hhds. Ale, brewed from Malt only. (One hhd. of brew 57, and one of brew 83.)  
4 One hhd. Colonial Ale, brewed from malt, hops, and sugar.

## CLASS III.—SPIRITS.

## SECTIONAL COMMITTEE :

Rev. J. I. Bleasdale, Chairman.

Hon. R. C. Hope  
Hon. J. T. Smith

The Hon. J. O'Shanassy  
The Count de Castelnau

Mr. Paul de Castella.



## EXPERTS :

Rev. H. England  
A. Menzies, Esq.

C. Newberry, Esq.  
W. Morton, Esq.

Colonel Stephens

A LARGE quantity of spirits is now being manufactured for sale in the colony. It amounted last year to between 90,000 and 100,000 gallons, upon which upwards of £30,000 was paid in duties at the rate of 6s. per gallon. For the same period the imported spirits amounted to between 900,000 and 1,000,000 gallons, upon which upwards of £450,000 was paid in duties, at the rate of 10s. per gallon. This shows the relation in which the colonially-manufactured spirits trade stands to the imported spirit-trade. It amounts now to about one-tenth, or 10 per cent. of the whole spirit trade, and is yearly increasing. That is chiefly to be attributed to greater care and skill on the part of the colonial manufacturers, and to an improvement in the taste of the consumers. The latter now know when they get a good article, and how to appreciate it. When first put on this market, the wine and spirit merchants would hardly look at colonially-manufactured spirits, but they now take large quantities from the distillers freely. There are also some country houses, at which imported spirits are no longer kept, their customers giving the preference to colonially-manufactured spirits. So great, indeed, has the change in both these respects become of late, that the distillers are now making all the spirits they can, and would make much more if grain was a little cheaper, and easier in the market. This will probably be promoted by the 2s. duty put on barley and malt last year. There are six distilleries in the colony, at most of which whisky, spirits of wine, geneva, and rum are made. The whisky and spirits of wine are made from malt only, chiefly colobial. The geneva from colonially-grown rye, with an admixture of juniper berries. The rum, from imported sugar. A good deal of methylated spirits is made, and is largely used by cabinet-makers and others for polishes and varnishes, and by chemists in place of spirits of wine. Old Tom was attempted, but the demand for it was so small as to induce the distiller to discontinue its manufacture. It was too cordialised a spirit to suit the colonial palate. Brandy is distilled principally from the refuse of the vineyards, for the fortification of wines and other purposes, by the wine-growers, not by the professional distiller. It did not amount to much more than 1500 gallons last year. The machinery and plant, lands and buildings, connected with the different distilleries, are valued at £50,000. At no distant time, this promises to be a flourishing colonial industry. Samples of all kinds of colonially-manufactured spirits have been sent to the Exhibition.

AITKEN, THOMAS, Victoria Parade, Brewery, East Melbourne.  
915 1 case Whisky

AITKEN, T. & A., Collingwood.

916 One demijohn each (Colonial Distilled, samples from bulk) Spirits  
of Wine, Rum, Gin, and Methylated Spirits of Wine





**BALLARAT DISTILLERY COMPANY, Wendouree-parade, Ballarat.**

917 Six Bottles Geneva, Distilled from Grain

918 " Whiskey "

919 " Rectified Spirits "

**BROWNE, HUGH J., 33 Victoria Parade.**

920 Six Bottles Spirits of Wine—1 as sample—distilled at the Australian Distillery, Yarra Bank, from Malt and Grain

921 Three Cases Lyon Brand Geneva, distilled at the Melbourne Distillery, Sackville-street, Collingwood, from Malt and Rye

**DE CASTELLA, H., Yering.**

921A Brandy, 1871

**FRASER, HUGH, Olive Hill, Indigo.**

922 Brandy, manufactured at Olive Hill Vineyard, October, 1872

**GIACOMETTI, FELICE, Daylesford.**

922A Brandy

**MACDONALD, W., North Wangaratta.**

923 Three Bottles Brandy

924 Six Bottles Brandy, manufactured from colonial wine (made by exhibitor), in the year 1870.

**SPINK, GEORGE, Tarrawingee.**

925A Brandy

**TRUSTEES OF INDUSTRIAL AND TECHNOLOGICAL MUSEUM.**

869 Wall Cabinet, with collection of Tobacco, in leaf and manufactured

**CLASS IV.—AERATED AND MINERAL WATERS.****EXPERTS :**Rev. J. I. Bleasdale  
Geo. Lewis, Esq.Dr. Gilbee  
Dr. GirdlestoneC. Newberry, Esq.  
E. Keogh, Esq.**BRIND, HENRY, Ballarat.**

925 Half-dozen Aromatic and Tonic Bitters

**DICKSON, JAMES, & CO., Franklin-street, East.**

926 Cordials

**DIXON, P. G., Rosslyn-street.**

927 Variety of Aerated Waters

**HATTERSLEY, JOHN, Yackandandah.**

927A Two dozen Sodawater

**JONES, W. B., 97 Flinders-lane West.**

928 Hepburn Mineral Spring Water

**JOSKE & MORTON, 4 Little Collins-street East.**

929 Ballan Seltzer Water

LYON, G., Beechworth.

930 Aerated Waters and Cordials

931 Soda Water and Lemonade

NEWTON & WEBSTER, El Dorado.

932 Dozen Soda Water

933 Dozen Lemonade

934 Dozen Sarsaparilla

PATEY, FRANCIS, Bacchus Marsh.

935 Two Cases Coimadai Mineral Water, gross each case

ROWLANDS & LEWIS, Ballarat.

936A Soda and Tonic Waters

## CLASS V.—TOBACCO.

### EXPERTS:

G. Murray, Esq. | J. Politz, Esq. | F. C. Lange, Esq. | H. C. Fraser, Esq.

THE culture of tobacco has always been more or less followed in Victoria, but its manufacture on a large scale is of recent date. The samples of manufactured tobacco sent to the Exhibition are partly American, and partly colonial. The cheaper kinds of colonially-manufactured tobacco are made up of American and colonial tobaccos mixed; the better kinds of American only, imported in the leaf. The duty on leaf tobacco imported is 1s. per lb., on the manufactured 2s., on cigars 5s. This gives a great stimulus to the import of the leaf for manufacturing purposes. The leaf tobacco imported for manufacture is from 5000 to 6000 lbs. per week, irrespective of what is grown here for manufacture. The consumption in Victoria is about 250,000 lbs. per month, or 1,500,000 lbs. a year, about one-third of which is manufactured in the colony. There is also an export trade in manufactured tobaccos here, almost as large as that for home consumption, Melbourne being the depôt for American manufactured tobaccos for all the Australian colonies. A good many cigars are made here, but the consumption of them is not at all equal to the consumption of imported cigars. That is, indeed, something wonderful, much more so than the consumption in any of the other colonies. Comparatively speaking, the consumption of real Havanna cigars is greater in Victoria than in any part of the world. This is the result, partly of a more refined taste, and partly of a greater ability to gratify that taste. These combined account for cigars, of the best quality, having been sold in Melbourne at £250 per 1000, or at 5s. to 6s. each. There are nine tobacco, cigar, and snuff manufactories in Victoria, and some hundreds of hands employed at them, either in turning the leaf into smoking tobacco, in manufacturing cigars, or in making snuff. The manufacture and consumption of snuff are not large. Exclusive of the stock-in-trade, of which no estimate can be formed, the investments in machinery and plant, lands and buildings, connected with these manufactories, amount to nearly £20,000, probably more. The quantity of tobacco grown in the colony in 1871 was only 2301 cwt., or 257,722 lbs. But as the demand for this increases, more





be grown, doubtless of superior quality. The growth of tobacco in the colony must keep pace with the demand for it, for the purpose of colonial manufacture.

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COWAN & PATON, Three-mile Creek, Beechworth.

3A Tobacco Leaf, grown from China Seed

DIXSON, ROBERT, & CO., 107 & 109 William-street.

3B Manufacture of Tobacco from the Leaf

HENLEY, JAMES, Oxley, near Beechworth.

3 Three boxes Maryland Tobacco, manufactured and in leaf; grown and manufactured by exhibitor at Oxley

LUCAS, ROBT., Colac.

7 One parcel of Tobacco

OWEN, DUDGEON, & ARNELL, 127 and 129 Lonsdale-street.

3 Tobacco

MOSS, WHITE & CO., 63 Queen-street, Melbourne.

3 Cigars manufactured in the colony from imported tobacco.

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## SECTION VII.—POTTERY AND GLASSWARE.

### EXPERTS:

Justice Barry  
Ailey, Esq.  
Mel Rede  
Were, Esq.  
Haddon, Esq.  
Campbell, Esq.

Dr. Bleasdale  
Hon. J. P. Bear  
Dr. Gillbee  
— Hammond, Esq.  
W. H. Wright, Esq.  
R. B. Gibbs, Esq.

Col. Stephens  
J. A. Panton, Esq., P.M.  
Hon. J. F. Sullivan  
Dr. Jonasson  
E. Klingender, Esq.

GREY & RANDAL, Dryburgh-street, Hotham.

3 Myall Pipes of every description

MOUNT, FRANCIS, Hotham.

Flint and Cut Glass

FORIAN PORCELAIN AND EARTHENWARE MANUFACTURING COMPANY, 55 Queen-street, Melbourne.

3 Kaolin from Bulla, in natural state

3 Piece of Kaolin, washed

3 Bottle Crystals

3 " Whiting

3 " Quartz, calcined and levigated

3 " Phosphate of Lime, calcined and levigated

3 " Porcelain Paste, or mixture in dry state

3 " Biborate of Soda



- 1487 Bottle Whitening
- 1488 „ Carbonate of Lead
- 1489 „ Porcelain Glaze
- 1490 Bone, calcined
- 1491 Frit, or the Glaze in a Vitrified State, having been fired to a high temperature in the frit kiln
- 1492 Five Stone China Jugs
- 1493 Two Porcelain Jugs
- 1494 Porcelain "Biscuit," or Unglazed Jug
- 1495 Earthenware Speckled Jug
- 1496 Earthenware Drab-Coloured "Biscuit," or Unglazed Jug
- 1497 Four Porcelain Vases, tinted blue
- 1498 Earthenware "Biscuit" Vase

The Specimens were made of Bulla Bulla Clay

#### TRUSTEES OF THE INDUSTRIAL AND TECHNOLOGICAL MUSEUM.

- 1659 Ceramic Art—Glass Case of Specimens of China and Earthenware, illustrating the processes of Printing on Earthenware
- 1660 Wall Cabinet of Specimens of Articles used in the Manufacture of China, Earthenware, and Encaustic Tiles; also Cut and Bent Glass
- 1661 Stoneware, Water Pipes, Chimney Top, Coolers, colonial-made (Sandhurst and Brunswick)
- 1662 Table of Encaustic Tiles
- 1663 Glass Case, illustrative of the Manufacture of Plaster of Paris Casts; also with Specimens of Marbles
- 1664 Stoneware and Pottery.—Rack of Colonial and other Specimens of Stoneware Manufacture.
- 1665 Vase of Pottery Ware (in window).
- 1666 Chimney-piece.—Colonial composition.

### SECTION VIII.—MACHINERY FOR GROUP.

#### SECTIONAL COMMITTEE:

The Hon. S. H. Bindon	W. Williams, Esq., Chairman.	
The Count de Castelnau	Joseph Jones, Esq.	The Rev. J. I. Bleasdale.
	W. Waddle, Esq.	

#### EXPERTS:

Hon. Capt. McMahon,	W. Meikle, Esq.	J. P. Atkinson, Esq.
W. Elsdon, Esq.	Colonel Ward.	

In the introductions to other sections of this division, and in the introduction to Division III., some detailed information is given in regard to the machinery at work in Victoria, and the remarks here offered may therefore be somewhat general in their character. The number of steam engines and other important machines engaged in gold mining, in agriculture, and the allied industries, and on board ships owned in the colony, might perhaps be approximately ascertained, since of those there has been some official cognisance. But to give their





number would go only a very little way towards the elucidation of the subject, since machinery is in general and extensive use in almost every branch of Victorian industry. There is probably no country on the face of the globe where steam power and mechanical contrivances are more extensively brought into requisition. The high price which manual labour commanded during the years that succeeded the discovery of gold was a strong inducement to the use of steam power, and the great prosperity that attended nearly every branch of industry at that period put steam engines within easy reach of all who had employment for them. There was at the same time a spirit of enterprise and speculation in the community that led it to launch out freely into expenditure, and wherever an opportunity presented itself to cheapen or increase production by the introduction of machinery, the opportunity was seized upon with avidity. A considerable percentage of Americans in our trading population in earlier days probably did something towards increasing our natural tendency to run machines. At all events, if our British connection helped us to set up big engines at an early date, it is unquestionable that the intimate relation that at one time existed between Australia and the United States was the means of introducing some of those smaller machines in the invention of which America is so prolific. It may be that the greatly extended use of machinery in Victoria is partly due to the general progress in the same direction, and that in view of what is happening in other parts of the world our own case is not so very wonderful after all. But it is certain, nevertheless, that the bulk of our working men use machines which they never heard of in their youth, and also greatly-improved implements and tools.

In the building trade stones continue to be dressed by means of hand labour, but blocks of both bluestone and sandstone are sawn into various forms, including monumental stones, paving slabs, &c., by means of machinery, sometimes propelled by steam; and in wood work a great deal is done by machinery, such as sawing, moulding, morticing, planing, joining, &c. Then in the erection of houses and other works, steam windlasses, travelling cranes, &c., are in extensive use. In the conversion of our valuable native timber into practicable sizes and shapes, steam engines were brought into use at an early date. It is not less than five-and-twenty years since the solitary pitman and splitter were superseded by the steam-engine—when the denizens of Bungaree and Bullarook were startled by the shrill screech of the circular saw. Flour mills were also institutions of the early days, and the machinery employed in them has continued to extend and improve until it is as complete and perfect as ingenuity can produce or money can buy. Breweries have been long in operation in the colony, employing the best of machinery and implements, and doing a very large trade. In more recent times oatmeal, pearl barley, and rice mills have been added, as well as malting houses, all provided with efficient machinery, and these are all usefully employed. In distilling, too, we use the newest and best of machines and utensils. At present there is one well-appointed sugar refining house in full operation, and another is

either being erected or is just about to be commenced. Our woollen manufacture is growing in importance. Seven or eight years ago an ingenious resident in the pastoral town of Hamilton constructed a loom for himself, and succeeded in fabricating a bit of tweed cloth; and more recently a Welsh weaver engaged in gold mining at Sebastopol succeeded in making a piece of flannel. These things wrought upon the public mind, and many schemes were proposed for the establishment of a woollen manufactory on a considerable scale. Geelong witnessed the first realisation of this idea. A cloth mill commenced operations there about seven years ago, with spinning jennies and power looms of the best description, and has since then produced annually a great quantity of excellent cloth. A second manufactory of the same kind has since been set up at Geelong, and this also is provided with all needful appliances. Another woollen mill has just commenced operations near Melbourne, and one is being erected at Ballarat. Our woollen mill machinery is all imported. One large paper mill has been at work for several years, converting very rough material into excellent printing and wrapping papers. Another, also on a large scale, is now being erected. In this department, too, our machinery is of British manufacture. In rope-making every stage of progress, from the very earliest, is illustrated in the colony. On bare patches of ground in the suburbs men and boys may be seen spinning twine by the aid of the most simple apparatus, while at our principal manufactory from £150 to £200 worth of rope can be turned out in a day. The machinery here employed is of American design and manufacture, and is not less beautiful than efficient. Nowhere is the advantage of engines and machines more forcibly impressed upon the mind than at this rope work. With the aid of his clever apparatus, the proprietor can supply large orders as they come in, and can thus do an extensive trade without being burdened with an expensive stock of manufactured goods.

In the meat-preserving houses that are now so numerous in the colony, some very fine machinery is to be seen at work, both in the treatment of the meat and in the preparation of the tins in which it is packed when ready for the market. Almost everything is done by machinery, and order, regularity, and cleanliness are thus obtained, in addition to cheapness of production and level excellence in the article produced. In the utilising of inferior or waste animal materials, and in the separating of tallow from the substances with which it is found in combination, machines are employed which are both ingenious and effective, and by their use much material that would otherwise be worse than useless is turned to good account. On the squatters' stations in the interior it is sometimes necessary to supplement the natural supply of water by pumping machinery, and in the construction of this our mechanics have found scope for their talents. One apparatus was constructed by means of which thirsty sheep could pump water for their own use, but horse and steam-power are still generally relied upon. For the washing of sheep and wool there are some highly-ingenious contrivances. In agriculture all the best machines and appliances at work elsewhere are here employed. In threshing the American plan, rather than the





English, is adopted. House feeding and manuring not being as yet much practised among us, straw does not form an important item in the produce of the farm unless it lies quite near a town or gold-field, and is not very carefully husbanded. Travelling threshing machines, generally propelled by portable steam-engines, visit the farms of a district in succession, and thresh out the whole year's crop in a few days. This mode of proceeding is wasteful of the straw, but it gets a heavy job out of hand in a short time, and enables the farmer to turn his corn into money at once.

Traction engines, and road steamers, have been introduced into the colony at different times, and have been employed, both in town and country, in hauling goods and in working road rollers. But great objection was made to them by the horses which they were endeavouring to assist, and some of them have been sent away again. A recently-imported steam roller, 20 tons in weight, is now usefully employed on the streets of Melbourne.

It would take more space than can be spared here, even to enumerate the different descriptions of machines to be seen at work in the colony. In every department of the publishing and stationery trades, the best of machinery is employed. In one of our newspaper offices, four and six-feeder Hoe printing machines are in use, while at another the stereotyping process has been introduced. The other newspaper offices, the Government printing office, and all our larger jobbing offices, are well supplied with machinery. Our binders, too, and paper-bag makers, have all the best appliances in their several lines. In pipe, tile, and brick making, steam-driven machines are employed with the best economic results. In the boot and shoe making trade, the new manufacturing system has been introduced, in which the leather and other materials employed are both cut out and sewn together by machinery, the men standing to their work as if the old familiar stools and lap-stones had never existed. In our clothing and shirt-making factories thousands of sewing machines are in constant use, this valuable aid to labour being also in extensive use among our saddlers, upholsterers, &c. In private houses, too, even of the humbler character, the sewing machine is frequently to be seen, and a large proportion of the growing girls of the colony are skilled in its use. As an article of luxury and display it already competes with the all-but universal piano. With the smaller domestic machines that are manufactured in Great Britain and America we are well supplied, and if any housewife mixes a custard, pares an apple, slices a cucumber, or squeezes a lemon without the aid of machinery, it is entirely her own fault.

As yet, nothing has been said about mining machinery, and that subject is too large to be more than alluded to here. It is in this department that steam-engines and other machines are most extensively employed, and with marvellous results. There are pumping and winding engines on the gold-fields, with cylinders of 72 inches in diameter and iron lifts of 24 inches. By means of agencies so powerful, auriferous quartz and drift are brought from depths of nearly 1000 feet, and the workings kept perfectly dry. To show what the use of the steam-engine and improved



machinery have done for gold mining, it may be stated that whereas at one time quartz could not be profitably got and treated that did not contain three or four ounces of gold to the ton, stone containing only half as many pennyweights is now made to yield a profit. In at least one mine in the colony, the drives were put in by means of a compressed air and boring apparatus similar to that used in making the railway-tunnel through Mount Ceniz, and all our considerable quartz mines are provided with new and improved apparatus for separating gold from the iron and other baser metals with which it is so often found in combination. In the smelting, refining, and assaying of our gold, the best modes and the best machinery have long been employed, and so successfully that the cakes of the precious metal which our banks sent to London for sale were for many years accepted as of the quality stamped upon them, experience having shown that no test of their merits was required. Recently we have established a Mint, capable of coining sovereigns enough to carry on the business of the whole civilised world, and the imported machinery there employed is the completest and most perfect that could be procured.

In view of the variety, excellence, and great practical usefulness of our Victorian machinery, it is a matter for regret that the public take so little interest in the subject. To all interested in the application of science, or who admire human ingenuity and inventiveness, some of the machines above enumerated would prove an interesting study, while no boy not altogether deficient in intelligent curiosity could see them at work without being the wiser for the experience. Perhaps the opportunity which the Exhibition affords may do some good in awakening in the public mind an interest in "machinery in group" which has not yet been very general or very pronounced.

AINLEY & CO., 13 Napier-street, Fitzroy.

- 942 Patent double-action Force and Lift Pump and Fire Engine

ALCOCK & CO., 132 & 134 Russell-street.

- 943 Lathe for turning Ivory Billiard Balls, &c.

- 944 Eccentric Lathe, in motion

BELL, ROBERT, 75 Chancery-lane.

- 945 Bell's Australian Press. To be patented. It is the first made in Victoria, and is an entirely new invention, of much simpler construction and greater power than the best hitherto used. The simplicity and accuracy of this press is such that it cannot be erected improperly, the impression requires no adjustment, and there is no possibility of misplacing parts.

BROWNE, H. J., 33 Victoria-street.

- 946 Hope's Excelsior Stone Cuber and Ore Reducer. Invented in Victoria. Patented in most of the Australian Colonies, England, France, Belgium, and the United States.

BROWN, WILLIAM, Elizabeth-street.

- 947 Small Screw-cutting Lathe, colonial made, with improvements





CALVERT, WILLIAM, Little Collins-street East.

- 948 Printing Press, in work, showing the process of printing in colours  
COCKEREL, ROBERT, Yea, Upper Goulburn.

- 949 Patent Lever Knife

CORBETT, A. G., 8 Queen-street, Melbourne.

- 950 New and Improved Portable Steam Engine, 4 horse-power, fitted with a steam-jacketted cylinder, patent variable expansion apparatus, and other fuel-saving appliances, having a large fire-box for burning wood. Mounted on wrought-iron wheels, and made by Marshall & Co., Gainsborough.

DALE, WM., & CO., Moray-street North, Emerald Hill.

- 951 Set Lady's E.S. Trees, Set Gentleman's E.S. Trees, Toe Stretcher, 7 pairs Men's Lasts, 2 pairs Women's, 1 pair Youth's, 2 Cripples' Lasts, 1 hand-made Foot

DANKS, JOHN, 42 Bourke-street West.

- 952 Spiral Steam Pumps, in motion; Brass Foundry, Pumps, Hydraulic Ram, &c.

FELDHEIM, JACOBS & CO., 48 Queen-street.

- 953 Glass case containing boxes of Krams' Vegetable Life Pills, and other Medicinal Preparations; together with Improved Piping Press and New Rotary Machine, employed in the manufacture of the above Pills. (To be seen in motion.)

FINCHAM, GEORGE, Richmond.

- 954 An Organ, the whole of which, even to the casting of the metal for the pipes, was manufactured in the factory, Bridge-road, Richmond; the keys and composition irons excepted, these being manufactured in Prahran and Richmond.

GEACH & ELLIS, 28 Swanston-street, Melbourne.

- 954A Wilcox and Gibbs' Sewing Machines.

GREER & ASHBURNER, 38 Little Collins-street East, Melbourne.

- 954B Separator, for Cleaning Grain.

HOPE, ARTHUR, Prahran.

- 955 Compound Stamp Battery.

LOCAL FORCES.—COL. W. A. D. ANDERSON, Commandant.

- 956 Machinery for making Enfield Ball Cartridges, and Photographs of Small Arms, Ordnance, Experiments, &c.

LANDE, W. J., 28 Collins-street West.

- 957 Anderson's Domestic Washing Machine

LONG & CO., 64 Elizabeth-street.

- 958 Improved Sewing Machines.

LOWE, J. E., 45 Stephen-street.

- 959 Reciprocating Water-pressure Engine, capable of 300 revolutions per minute

- MASSINA, A. H., 88 Collins-street East.
- 960 The Little Wanzer Sewing Machine
- MASTERS, W. H.
- 961 Raymond's Hand Sewing Machine.
- M'COMAS, J. W., 49 King-street.
- 962 Water Lifter, on frame
- MEMMOTT, WILLIAM, Ryrie-street, Collingwood.
- 963 Machinery for Making all kinds of Combs
- MILLER, JAMES, & CO., 61 Flinders-street.
- 964 Spinning Jenny
- MILTON, J. F., Sandridge.
- 965 Cork-cutting Machine
- POSTMASTER-GENERAL, Melbourne.
- 966 Machine for Embossing Stamped Envelopes, for sale to the public by the Department of the Postmaster-General—worked by hand, steam, or water power
- PITTARD, GEO., 93 Little Collins-street East.
- 966A An Improved Steelyard with counter-balance, to weigh from  $\frac{1}{2}$  lb. up to 600 lbs. (ordinary steelyards to weigh 6 cwt. only commence from 15lbs.) This machine is the first of the kind made in the colony
- 966B Weighing Machine, to weigh from 2 ozs. to 6 cwt.
- RASCHE, WM., C.E., 62 Collins-street East.
- 966C Model of a Direct-acting Steam Battery for Quartz Crushing
- 966D Model of a Pyrites and Ore Mill
- RIDDELL, JAS. S., 120 Russell-street.
- 966E Lighting Apparatus
- SANDS & M'DOUGALL, 46 Collins-street West.
- 966F Railway Ticket Printing Machine
- SMITH, ALEX. K., Carlton Foundry, Leicester-street.
- 966G Self-acting Water Lift for wells of any depth
- STOKES & MARTIN, 100 Collins-street East.
- 966H Large Medal Press; Embossing Presses; Button and Ornament Dies, and process of making
- TRUSTEES OF THE INDUSTRIAL AND TECHNOLOGICAL MUSEUM.
- 966I Model of Porcelain Kiln, used in Germany, for baking and burning the glazed "biscuit ware" into porcelain, with frame of diagrams explanatory of the processes of manufacture
- 966J Model of Lime Kiln, as employed at Rudersdorf, for burning limestone by means of wood or peat
- 966K Flint glass, Manufacture of, models of "Flatting" "Furnace" and other apparatus used in the manufacture
- 966L 4 Specimens of Manufactured Glassware





1 TAYLOR, H., & CO., 123 Gertrude-street, Fitzroy.

1 Weighing Machine

TERRY, ALFRED, Carlton Brewery.

1 Machine for the Preparation of Beer Finings

TROEDEL, CHARLES, 43 Collins-street East.

1 Specimens of Lithography

ULLATHORNE & CO., 74 Little Collins-street East.

1 Complete Set of Machinery for Boot Manufactory, and Boots in Process of Manufacture by Whiteway, Mason and Butt, 3 Elizabeth-street.

1 One Huxham and Brown's Improved Bark Mill.

WATSON, GEORGE, 174 Lonsdale-street East, Melbourne.

1 Slate Drilling Machine

WILSON, HUGH, Flemington-road.

1 Bootmaking Machinery—Leather Sole Cutting Machine, Ditto Rolling Machine, Pricking Machine, Skiving Machine, Split Lift Machine, Iron Last, and Sole Knife, manufactured in Victoria

VICTORIAN WOOLLEN MANUFACTORY, Geelong.

1 Hand Loom

WRIGHT & EDWARDS, Melbourne.

1 A wrought-iron False Bottom, as used for quartz stamping machines, manufactured from scrap-iron

1 One 12½-inch Cylinder Engine, exhibited in motion, capable of working to 25 horse-power actual, manufactured in Melbourne by exhibitors. It is stated to be particularly simple and adapted for colonial work

1 Iron Shafting in process of manufacture from scrap iron, showing the progress of manufacture from rough scrap iron to the finished turned shaft, as executed by the exhibitors

2 Horizontal Multitubular Boiler, exhibited generating steam to Wright and Edwards's Engine, giving the motive power to machinery in motion, requiring no brickwork in setting, and convenient for moving, manufactured by exhibitors

3 following exhibits, from No. 973 to No. 1085 inclusive, are exhibited by the TRUSTEES OF THE INDUSTRIAL AND TECHNOLOGICAL MUSEUM, and form part of the collections of the Technological Museum.)

3 Chains, for use in Mines

4 Mining and Blasting Tools used in the Hartz District, in English Coal and other Mines

5 Implements used for Alluvial Gold Mining in Victoria

6 " " Quartz Mining

7 Ropes " "

8 Jordan's Mining Dial, for making rapid and rough surveys

9 Vertical Section of a Timbered Boring Shaft

0 " " Lead Mine in Freiberg, Saxony



- 981 Case of Models, Boring Tools
- 982 Supporting Parts of a Mine, 6 Models showing Different Modes
- 983 Ventilating and Pumping, 3 Models of Apparatus and Valves
- 984 Mining Trucks, Buckets, and Barrow, 3 cases of Models
- 985 Safety Lamps, 5 Models of Davy's and other Safety Lamps,  
Diagrams of 12 forms of same
- 986 Boring and Pumping Gear, 4 Models
- 987 Boring Tower, used in Boring Artesian Wells in Germany, France  
and Belgium
- 988 Diagrams of Shafts, Timbering, Dams, Force Pumps, and Valves
- 989 Working and Ventilating Coal Mines, Model showing Different  
Methods of
- 990 Electric Fuse, Abel's Patent
- 991 Gun Cotton, for Blasting Rocks, Prince's patent
- 992 Safety Skiff, to Prevent Accidents from Breakage of Rope
- 993 Jordan's Double-action Pump, Model of
- 994 Waterwheel, Overshot, used at Frieberg
- 995 Portable Hand Whim
- 996 Windlass
- 997 Model for "Saddling-up" or "Raising the Mouth of a Shaft,"  
at Frieberg
- 998 Windlass, with Fly-wheel, Hartz District
- 999 Water Whim, or Double Water Wheel, for Working Winding
- 1000 Two-horse Whim, used at Frieberg
- 1001 Double Overshot Water Wheel
- 1002 Winding and Pumping Gear, put in motion by a double and a  
Vertical Pressure Turbine
- 1003 Double Pumping Gear, used in the deep Lead and Silver Mines  
Saxony
- 1004 Darlington's Hydraulic Pressure Engine
- 1005 Lowering Cage
- 1006 Safety Mining Cage
- 1007 Battery of Stamps used at Port Phillip Gold Mining Company  
Clunes, with Wrought-iron Lifter and Shoe
- 1008 Do., Mr. Bland's Method of Fixing Steel Socket Heads of Stamps  
to "Socket Lifters"
- 1009 Wayte's Stamp Batteries, worked by a Spiral Stamp Lift
- 1010 Savage's Patent Hand Crushing Machine
- 1011 Hustler's Patent Stamping Machine
- 1012 Man Engine, for Facilitating the Descent and Ascent of Men  
Deep Mines
- 1013 Battery of Stamps, with Amalgamator
- 1014 Double Cylinder Water Pressure Engine, used at Frieberg
- 1015 Kinnear's Patent Crusher and Amalgamator
- 1016 Wilson's Wet Crushing and Stamping Machine
- 1017 Cornish Stamping Batteries
- 1018 Wet Crushing Stamping Battery, used at Frieberg
- 1019 " " " " " in use over the Continent  
Europe





- Chilian Mill, Robson's Improved
- Collier's Crusher and Amalgamator
- Stamping Battery
- Cradle Crushing Machine
- Hunt's Diamond and Gold Washing Machine
- Roberts' Double-barrelled Windlass for Deep Mining
- Pair of Quartz-crushing Rollers, worked by One-horse
- Ore Washing Machine, with Moveable Sieve
- Two Models of Hand Jiggers
- Ore Straining Machine
- Plunging Sieve Machine or Jigger
- Ore Washing Machines, with Valve Piston and Fixed Sieve
- Spiral Drum Washing Apparatus
- Riddle Apparatus
- Ore Grinding Mill
- Apparatus for Washing Ores, by a system of Pointed Separating Cisterns
- Percussion Tables, two Models
- Riddle Apparatus and Separator
- Silver Ore Washing Apparatus, as used in Friburg
- Rasche's Patent Direct Acting Steam Batteries (wall diagram)
- Sweep Tables (German), two Models
- German Chest, or Deposit Trough
- System of Slime Troughs, or Labyrinth, for the classification of Crushed Ores
- Self-acting Tipping Washing Tables
- German Sleeping Table
- Deposit, or Slime Trough
- Two Models of Set of Revolving Conical Sweep Tables, used in the Hartz Mining District
- Russian Hand-power Alluvial Gold Washer
- Model of Buddle, with Munday's Patent, used for Auriferous Pyrites, by the Port Phillip Gold Company, Clunes
- Revolving and Hopping Ore Dressing Machine, German
- German Gold Washing Machine
- Meierhoff's Patent Galvanic Cradle
- Mining Cradle
- Collecting Tables, or Mercury Baths, Hart's Patent
- Trough, or Puddling Machine
- Horse Puddling Machine
- Water Injectors, for supplying Water to Steam Boilers, Giffard's Patent. *Diagram.*
- Inclined double Tram Road, with hauling gear and break
- Tyrolese Amalgamator
- Russian Fine Gold Washing Apparatus
- Russian Sieve, used in the Ural for washing auriferous deposits
- Puddling Machine
- Amalgamation of Silver Ores, Apparatus used for, at the Lead and Silver Smelting Works, Halsbrücke, Saxony

- 1063 Amalgamator, Hart's patent
- 1064 Amalgamating Table
- 1065 Furnaces—Double Reverberatory Roasting Furnace, in connection with Fume Chambers, as used in Freiburg in the reduction of lead ores
- 1066 Calciner, or Double Roasting Furnace, used in copper smelting
- 1067 Model of a Reverberatory Smelting Furnace
- 1068 Single Puddling Furnace, or Reverberatory Refining Furnace, used in converting cast iron into wrought iron
- 1069 Reverberatory Refining Furnace
- 107 Diagram, Roscoe's Self-acting Lubricator, for lubricating steam piston and valves
- 1071 Reverberatory Furnace, for refining silver
- 1072 Liquidation Hearth, as used in the separation of silver and lead from copper, by liquation
- 1073 Copper Refining Hearth, for refining "blister copper" for malleable and marketable copper
- 1074 German Forge, or Bloomery Fire, for converting pig iron into malleable iron
- 1075 Muffle Furnace, used in German method of assay of copper and argentiferous lead ores
- 1076 German Cupelling Furnace (two models)
- 1077 Extraction of Silver from Ore—Augustin's Method
- 1078 Annealing Furnaces
- 1079 Elbow Furnaces, as used in fusing crushed and washed, but unroasted (raw) ores with iron
- 1080 Hot Blast Stove
- 1081 Cupola Furnace (Founder's), used in remelting pig or scrap iron for castings (two models)
- 1082 Double High-blast Furnace, used in Germany for the reduction of ores containing galena and iron pyrites in equal parts
- 1083 High-blast Furnace, used in Germany for the reduction of iron ores for metallic iron
- 1084 Furnace and Distilling Apparatus, for the reduction of calcined zinc ores
- 1085 Double-bedded Reverberatory Furnace, for calcining crushed calamine and sulphurous zinc ores
- 1085A Vertical Cylinder Blast Machine, used for blowing furnaces
- 1085B Glass Jar of Mining Blasts
- 1085C Furnace Bellows
- 1085D Tilt Hammer
- 1085E Lift Forge Hammer, worked by water
- 1085F Rolling Mill, Roughing and Sheet Iron
- 1085G Front Forge Hammer
- 1085H Gas-Making.—Double Retort Furnace, as employed in the Melbourne Gasworks
- 1085I Purifying Coal Gas, Model illustrating improved method of, as practised at the Launceston Gasworks
- 1085K Retort Furnace, as erected at the Geelong Gasworks





- 1085L Ford's Rock-Boring Machine (driven by compressed air).—Frame containing photographic views of the machine at work, and letter-press description
- 1085M A Mercurial Barometer, with diagram, illustrating the principle of action
- 1085N Electric Telegraphy—Two Cases of Articles and Materials used in Land and Sea Telegraphy

### DIVISION III.—SCIENTIFIC INVENTIONS AND NEW DISCOVERIES.

#### SECTIONAL COMMITTEE:

Chairman, Sir George Verdon.	Vice-Chairman, The Count de Castelnan.
Hon. S. H. Bindon	W. Williams, Esq.
Rev. J. I. Bleasdale	W. W. Wardell, Esq.

IN a young colony the number of workers in the field of science is necessarily small. The leisure required for the cultivation of the exact and abstract sciences is not available during the excitement incident on the establishment of the institutions of a busy community. Those who cultivate the natural sciences very properly confine their labours to observation, while the applied sciences merely receive attention in proportion to the increasing wants of the people. The progress of discovery, under such circumstances, must be slow, and it is not desirable that it should be otherwise. There are, no doubt, some countervailing advantages. There is greater activity of thought; there is the necessity for finding substitutes for articles and processes, not always obtainable or readily available; and in the application of old processes it is requisite that modifications to suit the climate, and the materials operated on, should be made. One of the most striking instances of the operation of these motives to invention was afforded by the discovery of what is now known as the Adelaide stripper. The wheat crop was heavy and ripening, and there were not sufficient hands to gather it in. The happy thought of threshing the grain from the standing corn occurred to one of the farmers, and by very simple machinery—an arrangement of vanes and beaters—success was at once achieved. There were here the stimulus to invention, and the climate which rendered success possible. The improvements brought about under these conditions, however, seldom rise to the dignity of scientific discovery, although they may supply valuable aid towards that end.

That the observers in the field of natural science have, in this colony, done good service, will be admitted by all who have interested themselves in the records of astronomical, meteorological, and botanical research. At the time when Sir John Herschel set the example of taking up his abode in a new hemisphere, in order to obtain a "coign of vantage" for the observations he desired to make, there were scarcely any reliable observers with means at their command. Now there is no lack of them, and every year adds to their number, and the efficiency of their apparatus and arrangements. It is for this reason that Sir John Herschel's example has



been but sparingly followed. The scientists of Europe recognised as thoroughly efficient and reliable their collaborateurs on this side of the world, and already have the observations made had their influence, in modifying conclusions previously arrived at, in corroborating or controverting previously conceived opinions. There is thus a co-operative influence at work throughout the world, which gives to every country a joint interest in scientific discovery. Victoria has contributed valuable matter towards a right appreciation of nebular phenomena, to the corporate stock of knowledge on terrestrial magnetism, to the botanical wealth of the world, not merely as regards the classification, but the utilisation of plants; and has given as freely as she has received contributions of materials towards the work of acclimatisation—a work in which, more than in any other, the advantages are strictly mutual.

With regard to the applied sciences, the fact that their cultivation keeps pace with the material requirements of the industrial classes is illustrated by what has been done under the patent laws since they came into operation in 1854. Of the first thousand patents applied for, 346 related to mining operations, washing, puddling, sinking, driving, rock-boring, separating, extracting, amalgamating, retorting, calcining, roasting, and other allied processes; and 105 related to the cultivation of the surface soil, and the treatment of its products, the greater number referring to the improvement of labour-saving agricultural instruments. More than one-third of the applications were for improvements in mining, and little more than a tenth had relation to agriculture. This was for the period from 1854 till the end of 1867. Of the next 500 patents applied for (from January, 1868, till February, 1871), 129 were for improvements in mining, and 157 for improvements in agricultural operations. The number of the former is still large, betokening the continued existence of great activity in the industry; while the increase in the number of improvements in tillage, gathering in the harvests, managing flocks and herds, and treating the products, is very marked.

To show the varied purposes to which inventive genius is now directed; and inferentially the requirements of the industrial community, it will be interesting to note the subject matter of the patents applied for during the first nine months of the present year. Thirty-one applications have relation to apparatus and processes connected with agriculture, including 8 relating to reaping, mowing, and dressing; 3 to ploughing; 7 to the preservation of food; and 1 each to digging potatoes, threshing, manure, flax, flower pots, albumen from blood, washing sheep, wool presses, curing of pleuro-pneumonia, grinding bones and bark, and renewing the points of worn sheep-shears. Twelve applications relate to mining, including 3 for roasting; 3 for stampers; 3 for blasting powder; and 1 each for amalgamating, preventing accidents, and smelting copper. Sixteen relate to household appliances, including sewing machines, knife cleaning, clothes washing, drying, weighing, mirrors, filters, gas, locks and latches, blinds, window fasteners, ventilators, and deodorising and removing buildings, and treating hair. Seventeen relate to motive power and machinery, including steam engines, pumps, castings, stone-breakers, wind-mills, belting, propelling, snagging, sub-aqueous excavating, aerial navigation, wire rope, tramways





railways, and there are only 15 others which do not come within four heads. Of these—3 relate to tanning, 2 to chemicals, 2 to shoes, and 1 each to harness, bottles, brewing, printing, cooling, lace, pottery, and registering heat at a distance. An inspection of this section of the catalogue is calculated to lead to a low estimation of the progress made in scientific discovery, but such estimate would be unjust, and it can only be corrected by an investigation of the entries in every department, for there are few of them with which science is not intimately connected. The whole Exhibition will be a exponent of the triumphs of scientific discovery; and the progress made in new industries will best be seen from an inspection of the Exhibition under the various class headings with which they are allied.

#### ACCLIMATISATION SOCIETY, Melbourne.

##### 3A Proceedings of the Society

##### AHERN, M.

- 3 Twenty-one different Specimens of Horseshoes, manufactured by exhibitor. (Obtained the prize of the Sydney Agricultural Show).
- 7 Horseshoe-nails, do. do.

#### ASTRONOMER, THE GOVERNMENT, Melbourne.

- 3 A Mirror Galvanometer
- 7 A Conical Pendulum Chronograph for Astronomical Purposes

#### BAKER, CAPTAIN, Dunolly.

- 7 Newtonian Reflecting Telescope

#### CALVERT, W., 89 Little Collins-street East.

New Weighing Apparatus, invented by Louis Brennan, of Fitzroy, viz.:-

- 7 The Compound Steelyard (patented)
- 3 New Counter Weighing Machine (patented)

#### CHARLESWORTH & SHARP, Sandridge.

- 7 Improved Anti-Fouling Composition for Preserving Ships' Bottoms and other analogous purposes (Lowmoor iron plate)

#### HEILKE'S FILTER AND POTTERY COMPANY, Sandridge-road.

- 5 Table Fountain and Filter
- 3 Travelling Filter
- 7 Syphon Filter for Tanks
- 3 Household Filters
- 7 Canvas Cooling Filters.
- 7 Self-filling Self-cleansing Filter, to filter 200 gallons per day (kept in working order for 10a. per annum)

#### EDUCATION, BOARD OF, Melbourne

- 01 Reports and Copies of the Rules and Regulations of the Board of Education
- 102 C of each Work published in Victoria in use in Common Schools

## ENGINEER CORPS, VICTORIAN VOLUNTEERS.

28 Models of Military Engineering Works, namely:—

- 1104 Permanent Fortification, half-polygon, on Vauban's First System, by Staff-Sergeant W. Draper, and Sappers Launder, Kirby, and Edgley
- 1105 Field Fortification, Square Redoubt, by Sergeant Murphy
- 1106 Field Fortification, Star Fort, by Sergeant White, and Sappers Hodge and Elliott
- 1107 Field Fortification, Redan with Flanks, by Sergeant White
- 1108 Field Fortification, Two-Gun Elevated Battery, by Corporal Sinclair
- 1109 Field Fortification, Half-Sunken Gun and Mortar Battery, by Sapper Sedgwick
- 1110 Field Fortification, Sunken Gun and Mortar Battery, by Sapper Tinkler
- 1111 Spar Bridge (Double Truss), by Sapper Porter
- 1112 Canvas Pontoon Bridge (Fowkes), by Sapper Porter
- 1113 Spar Bridge (Single Truss), by Sappers Amess and Raven
- 1114 Spar Bridge (Lever Truss), by Sappers Amess and Raven
- 1115 Spar Bridge (Double Truss), by Sappers Curtis and Elliott
- 1116 Field Fortification, Screen Gun Battery, by Sappers Short and Elliott
- 1117 Military Mining (Loose Soil), by Sappers Hayes and Elliott
- 1118 Military Mining (Ordinary Soil), by Sappers Cooper and Elliott
- 1119 Field Fortification, Single Kneeling Sap, by Sappers Lambie and Richmond
- 1120 Field Fortification, Double Kneeling Sap, by Sapper Robertson
- 1121 Coast Defence, Martello Tower, by Sapper Dike; Guns and Carriages, Sappers Courtis and Durbridge
- 1122 Coast Defence, Four-Gun Martello Tower, by Sapper Dike, Guns and Carriages, by Sappers Jennings, Courtis, and Durbridge
- 1123 Suspension Bridge, by Sappers Edgley and Swinbourne
- 1124 Bridge of Casks, by Instructor Morton
- 1125 Stone Bridge (destroyed), by Sergeant Thomson and Sapper Mulhall
- 1126 Orakau Pah, New Zealand, with disposition of Troops under General Carey, 22nd April, 1864, by Instructor Morton
- 1127 Military Waggon (Fowkes Bridge), by Sapper Doubleday
- 1128 Military Waggon (Blanshard Pontoon), by Sergeant Draper and Sapper Doubleday
- 1129 Pontoon Bridge (Blanshard), by Sergeant Draper
- 1130 Field Fortification, Bastioned Fort, by Sappers Gon and Harvey
- 1131 80-pounder Armstrong Gun and Carriage, by Sappers Wighams and Durbridge
- 1132 Perspective Plans of Batteries and Towers (4), by Corporal Richardson

FOSTER, RICH'D. S., North Brighton.

- 1133 Yarra Yarra Bouquet, a perfume similar to Eau de Cologne, but purer and more delicate





HAYES & BINGE, 95 Swanston-street.

- 1134 Glass Case, containing sets and partial Sets of Teeth on gold, silver, and vulcanite

HIGGINS, JOSEPH F., 18 Little Collins-street East.

- 1135 One Higgins's Patent Disinfecting Closet  
 1136 One do. do., Ottoman Commode  
 1137 One Case Higgins's Patent Poudrette  
 1138 Three Higgins's Patent Disinfecting Closets, for yards, public places, and ordinary dwellings

HARRISON, JAMES, 3 Earnbank-terrace, Carlton.

- 1139 A Wine and Beer Preserver, Aerater, and Cooler  
 (See also under "Preparations of Food—Meat-Preserving.")

JONES, JOHN, 106 Lonsdale-Street East.

- 1140 Surgical Appliances, consisting of Ladies' Abdominal Bandages, Lace Stockings, Knee Caps, Uterine Belts and Pessaries, Spinal Supports, Shoulder Braces and Leg Instruments for Deformity, Gents' Riding Belts, &c.

JOSEPH, R. E., 77 Swanston-street.

- 1141 A Magneto-Electric Clock, worked by induced currents

JOACHIM, GUSTAV, 85 Collins-street East.

- 1142 Tea Heating, Sweating, and Curling Apparatus (to produce the Tea of commerce), a framed drawing

LANGE, CHARLES, 64 Collins-street.

- 1143 One Case of Artificial Teeth

LANG, MRS. THOMAS, 52 Elizabeth-street.

- 1144 One Domestic Washing Table, called "Mrs. Lang's Patent Economical Domestic Washing Table"  
 (Claims to combine cheapness, ease of working, saving of soap and other materials used in washing, saving of the clothes and articles washed, and only requiring cold water.)

LOWE, JOSEPH E., 45 Stephen-street.

- 1145 Money Table for Pay Windows at Railway Stations, Theatres, &c., to obviate the difficulty of lifting small coins from a flat surface

M·MILLAN & STAFF, Royal Arcade, Melbourne.

- 1146 Vine Sulphurator, for applying sulphur to vines. A certain remedy for the disease *oidium Tuckerii*

MENERE, H. W.

- 1146A Menere Battery Gun Carriage, now erected at Williamstown, weight 16 tons

MURPHY, EDWARD, Sandridge-road.

- 1147 A Patented Ceiling Ventilator, with Plaster Centre Flower attached (Tuckerii)



## ORDNANCE DEPARTMENT, Melbourne.

## 1147A Photographs of Gunnery, Artillery Practice, &amp;c.

Note.—Catalogue attached to exhibit.

## PICKERSGILL, JOSEPH, 34 Collins-street.

## 1147A Pickersgill's Patent Protector, a Leather Shield for Preventing Accidents attending Bursting Bottles, particularly Soda and Aerated Waters

## POSTMASTER-GENERAL, THE, Melbourne.

- 1148 Telegraph Instruments, &c., by Siemens and Halske, of Berlin
- 1149 Improved Form of "Relay," or Receiving Magnet
- 1150 Register for Receiving and Recording Telegrams
- 1151 Signal Key, adapted for either closed or open circuit plan
- 1152 Leclanche Battery—elements, Gas Carbon and Zinc, Peroxide of Manganese, Muriate of Ammonia, and Water
- 1153 Chester's Main Battery—elements, Platina and Zinc, Sulphuric Acid and Water
- 1154 Sulphate of Magnesia Local Battery—elements, Copper and Zinc, Sulphate of Copper, Sulphate of Magnesia and Water
- 1155 Sulphate of Magnesia Main Battery—elements, Zinc and Lead, Sulphate of Magnesia, Sulphate of Copper and Water.
- 1156 Glass Case containing Electrotyped Dies for Fee Stamps—three complete sets. Also specimens of Fee Stamps printed from the exhibited and other dies, designed and produced by J. P. Atkinson, printer to the department of the Postmaster-General, with photograph of General Post-office.
- 1157 Section of Telegraph Pole for Railway, showing Insulators, Brackets, Conducting Wires, &c., in position, with portable Instruments for use of Railway Guards in the event of Accident, &c. Designed by S. W. M'Gowan, Esq., Inspector of Postal and Telegraph Service.

The instrument exhibited herewith is a portable Transmitting and Receiving apparatus, designed on the principles of Morse's electro-magnetic telegraph, for the use of railway guards, in the event of accident or interruption to the traffic. It consists of an electro-magnet, arranged for working on the main circuit of any telegraph line, a bell, a lever-switch (for shutting off the up or the down line, as may be necessary), a spindle carrying ten discs, with platina-toothed connections for numerals from 1 to 0, and having above the spindle corresponding lever-keys, with platina contact points, to operate against the toothed periphery of each disc, so as to connect or disconnect the main circuit at pleasure.

The working of the instrument is purely mechanical. It is not necessary that the person using the apparatus should possess any knowledge of telegraphic manipulation. The signals are conveyed by numerals, either in single or combined form, arranged to convey intelligence relating to accident of





any description. The reply signal is given in the ordinary manner, by the signal-key, from the office receiving the accident signal, and is heard by the guard (or person communicating) on the bell.

The transmitting spindle is revolved by hand, at the rate of about eight (8) revolutions per minute.

RASCHE, W., 62 Collins-street East.

- 3 Model of Vertical Tubular Boiler (patent)
- 2 Design of a Machine in Isometrical Projection
- 2A Rasche's Patent Pestle and Mortar

REGISTRAR-GENERAL, THE, Melbourne.

- 1 Eight Volumes Victorian Patents applied for to the end of 1871
- 2 Abstracts of Colonial and English Patent Specifications

REYNOLDS, MAXWELL, 35 Queen-street.

- 3 Giant Powder, a new description of Blasting Powder

ROBERTS, J. H., Linton.

- 1 An Addition and Subtraction, and a Multiplication and Division Table, for teaching Arithmetic to young Children

ROFF & CO., 87 Flinders-lane East.

- 5 Thirty samples of "Sullivan's Disinfectant" Preparations—The "Hydrated Double Chloride of Calcium and Aluminum" (Royal Letters Patent), manufactured from the clays of Victoria; specimens of New Chemicals; Pure Oleic Acid and Iodoform; Morbid Specimens, &c. Twenty-eight samples of Water collected from the different reservoirs throughout the colony of Victoria, showing their impurities and "Sullivan's Chemical Method" to precipitate the same. No alum or chloralum used, or anything injurious to health, as testified by the Government analytical chemists, and the medical profession. Disinfectant Toilet Fluid, highly-scented. It is stated that the use of it will prevent the catching all contagious diseases. Same in powder.

ROWLAND & CO., 135 Little Collins-street.

- 1 A Quick and Simple Patent Process of Soldering without a soldering iron
- Patent Clothes Line Apparatus

SCOTT, JAMES, Burwood-road, Hawthorn.

- 5 A Circulating Self-contained Atmospheric Gas Bath, for hot plunge and vapour baths

THOMAS, JOHN, 1 Madeline-terrace.

- 1 Model of Thomas's new method of Working and Mounting Naval Ordnance, by which the recoil is exhausted between two axes, bearing two counterpoises, one rising before and the other behind as the gun descends

TERRY, ALFRED, Carlton Brewery.

- 1170 Saccharometers, Hydrometers, Alcohohmeter, Fermentometer, Chondrometer; Assay Still by M. J. Salleron, wine and spirit analyser; Thermometers, Slide Rules, &c.; Revenue Still, Mash Tun, Thermometer, Acetometers

WATERS, EDWARD, 58 Little Collins-street East.

- 1171 Two Volumes of the *Australian Mechanic and Journal of Science and Art*  
1172 A Record of Designs, Inventions, &c.

WILSON, RALPH, 46 Elizabeth-street.

- 1173 Wilson's Patent Ventilators.

## DIVISION IV.—RAW PRODUCE.

### SECTION I.—LEATHER.

#### SECTIONAL COMMITTEE:

T. Lambert, Esq., Chairman.		
J. B. Patterson, Esq.	Hon. W. H. F. Mitchell	Hon. W. M. K. Vale
James MacBain, Esq.	Hugh Parker, Esq.	

#### EXPERTS:

Hon. T. Loader	H. Box, sen., Esq.	J. Carson, Esq.
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To trace the origin of the leather manufacture would carry us very far back in the history of the human family. How soon after Batman's arrival on the Yarra the skins of beasts were first prepared for the use of Victorian colonists, it is not necessary to determine. A sufficiently early stage of our great leather manufacture is indicated when reference is made to a primitive tannery that was observed in the first year of the settlement of Port Phillip, in which raw bullock-hides, suspended by their four corners from contiguous saplings, did duty as pits. In these, other bullocks' and cows' hides were soaking in an infusion obtained from mimosa bark, which the tanners had whittled with their pocket-knives, and (it is added) macerated with their teeth. How, from this small beginning, Victorian tanning grew and prospered, it would take time to tell. By-and-bye, proper pits were dug in which to steep the skins, curriers' shops were built and furnished, and several kinds of leather suitable to the requirements of the country were turned out, if not of the highest finish, still possessing the qualities of usefulness and durability.

Coming down to the commencement of the gold-producing era, we find that the leather manufacture suffered from the temporary neglect into which all the older industries of the colony then fell. In 1853, the price of ox and cow hides, in Melbourne, was only 5s. each, while in the interior they had no money value at all. In the beginning of 1854, the exportation of salted hides was commenced, and they were bought on the gold-fields for from 1s. to 2s. each. The rates of carriage from the diggings to the sea-





board were then very high, and in the winter months teamsters would not burden themselves with return loading at any price that the hide-dealers could afford to pay; and the skins, then so abundant at all the new diggings, had either to be salted and held over until summer set in, or permitted to go to waste. The first hides brought to town cost 7s. 6d. a piece for cartage alone, which price gradually fell till it reached 1s. 6d. per skin, to the great encouragement of the hide traffic. From 1854 to 1860 the great bulk of our hides was exported, but in the latter year tanning on a considerable scale commenced, and has so increased since then that we now use up nearly all our raw material and supply nearly all our own requirements, while we also export a considerable quantity of excellent leather. This trade has long presented this unusual feature, that between Great Britain and Victoria there has been both an export and an import traffic in both directions. In heavy sole leather, and in leather suitable for machine work, our domestic supply has been deficient, while of light sole leather we have long had a great deal to spare. But in this last article local consumption is treading close upon the heels of production. The establishment of factories in the colony has led to a very large production of women's and children's boots and shoes, which until within the past few years were nearly all imported, and it now seems likely that ere long we will fully supply all our own wants, and use up the greater part of our own material.

Victoria affords many valuable facilities to the tanner and the furrier. Its bullock hides are of the very best quality, and the country is rich in valuable tanning bark, of which large quantities are exported to Europe. In the earlier years of the goldfields era sufficient care was not used in the skinning of slaughtered animals, and the character of our hides suffered accordingly. Now this cause of complaint no longer exists, except in regard to calfskins, which are still roughly handled in the slaughter-houses, and the consequence is that we are still dependent upon England, France, and Germany for supplies of the particular kind of leather that calfskins produce. Sheepskins form an important article of commerce. Large quantities of these are dried and exported, with their wool adhering; but a much larger quantity are exported to Europe in the form of basils, and are there employed in numerous branches of the leather manufacture; while a third mode of dealing with them is to finish and dye them in the colony, when they assume many elegant forms, and become suitable for the purposes of the bookbinder, the coachmaker, the cabinetmaker, the purse and pocket-book manufacturer, &c. They are exported to America in considerable quantities, after being "chemicalised." Our Victorian roans, and enamelled and japanned leather, are as good as could be desired. Goats' and kids' skins are also worked up to a limited extent, the former sometimes with the hair on, for mats, rugs, and the like. Kangaroo skins are becoming an important article of traffic, and experts declare that they make the toughest and most pliable leather in the world. Boot uppers of this material are most comfortable and durable. It also makes the best of morocco, whips, gloves, &c. Of these skins some are exported in their raw state, and others after being manufactured. Great numbers of kangaroos are slaughtered every year for their skins alone, and the



hunters who make war upon them make good wages. Nor is their destruction matter for regret, inasmuch as they increase so fast in certain districts of the colony, when unmolested, as to materially affect the profits of the grazier. Rabbits' skins are rapidly becoming an important article of export. These animals have increased to such an extent since their introduction to Victoria that our settlers have to employ men to destroy them, and immense numbers of their pelts are thus brought into the market. In Europe these are used in the manufacture of felt hats, for which the fine down which lies close to the animals' bodies is found to be well adapted, in combination with wool and the hair of the Scotch hare. As at present packed for exportation the skins are liable, on the voyage, to the attack of a worm, of which they seem to carry the germs along with them, and in this way some proportion of those sent away sometimes sustain injury. But no doubt colonial ingenuity will discover some mode of overcoming this difficulty. The rapid growth of this comparatively trivial industry illustrates the commercial activity of the colony. Five years since, rabbit-skins were unsaleable. When first they became an article of trade they were worth no more than 6d. a dozen, whereas they are now worth 1s. 8d. to 2s. in Melbourne, and sell in London for 3s. 6d. This year the export has amounted to 100,000 dozen.

Many of the marsupial animals of Australia are clothed with rich and beautiful fur, and the conversion of this material into articles of dress and ornament affords profitable employment. A well-finished carriage-rug made of the skins of the Tasmanian black opossum, is an article of luxury that it would be difficult to surpass, whether in usefulness or in elegance. The animals known as the native bear, the native cat, the wallaby, the kangaroo rat, and some others, all supply the Victorian furrier with valuable material, which he converts into men's caps, coats, waistcoats, &c., and into ladies' muffs, cuffs, and other articles of wear.

(The following exhibits, from No. 1174 to No. 1177 inclusive, are exhibited by the TRUSTEES OF THE INDUSTRIAL AND TECHNOLOGICAL MUSEUM, and form part of the Technological Museum.)

- 1174 Tanned Hide of a Bullock, prepared at Rosedale Tannery, Gipps Land
- 1175 Show Case of Specimens of Tanned Leather, from Rosedale Tannery, Gipps Land
- 1176 Tanning—Series of Specimens in Cases and Photographs, illustrating processes in the preparation of Tanned Leather
- 1177 Wall Case of Materials used in Tanning and in Boot and Shoe Manufacturing

CLARK, JOHN, & SONS, 193 Elizabeth-street, Melbourne, and Stafford Tannery, Richmond.

- 1178 Two sides Crop Leather and one Crop Butts

COHN & CO., 8 Hawke-street, West Melbourne.

- 1178A Victorian Kangaroo Skins

DAVIES, EDWARD, & SONS, Weston-street, Brunswick.

- 1179 Five curried Calves' Skins
- 1180 Five Tanned Skins





DAVIES, GRAHAM & CO., 61 Mair-street, Ballarat.

- 1181 A collection of Colonial Leather

FOX, JOHN, & CO., Emerald Hill.

- 1182 Four dozen White Leather

FRANKLIN & CAMERON, Echuca.

- 1183 Six sides Harness Leather

- 1184 Three black and brown Kangaroo Skins, for saddle and shoe purposes

- 1185 Six Saddlers' Brown Bends—black grained Goats' Skins, Colonial Calf Skins, Goat Skin Buggy Mats, Kangaroo Skins tanned for carriage rugs

MICHAELIS, HALLENSTEIN & CO., 30 Lonsdale-street East, and Footscray Tannery.

- 1186 Various sorts of Leather

HAYMAN, J. B., Grosvenor-terrace, off Simpson's-road.

- 1187 Saddle, Harness, and Shoe Leather

NAYLER & CO., Warrnambool.

- 1188 Four Sides of Kip

- 1189 Four Calfskins

- 1190 One Thick Skin (with hair on)

RAYMENT & CO., Postoffice-place.

- 1191 Drapers' Boxes.

SHIELDS, EDWARD, Chewton.

- 1192 Two Sides Harness Leather, 33 lbs

- 1193 Two Sides Kip, 13½ lbs

- 1194 Two Large Calfskins, 8 lbs 6 ozs

- 1195 Six Small „ 7 lbs 10 ozs

- 1196 One Goat Skin

SMITH, J. J., & CO., 198 Elizabeth-street.

- 1197 One Hide of Sole Leather (manufactured by John Corcoran, of Tarraville)

## CLASS II.—SADDLERY AND HARNESS.

### EXPERTS:

H. Box, sen., Esq. | A. W. Robertson, Esq. | Hon. T. Loader  
— Cowie, Esq.

BLANCHARD, CHAS., 92 Smith-street, Collingwood.

- 1198 Saddlery and Harness

DOBBIN, SAMUEL, 68 Stephen-street, Melbourne.

- 1198A Stock Saddle.

EYTON, THOMAS, 97 Queen-street.

- 1199 Saddlery

FRANKLIN & CAMERON, Echuca.

- 1200 Four bright-grained leather Kangaroo Skins, for saddlers' work

## GARBUTT, JOSEPH, 50 Berkeley-street, Carlton.

- 1201 Pair long Scotch Hames
- 1202 Pair short                   "
- 1203 Pair long Spring Cart Hames
- 1204 Pair short                   "
- 1205 Pair long Cart Traces
- 1206 Pair Ploughing Traces
- 1207 Cart Backband
- 1208 Double and Single Twist

## GARBUTT, ZECHARIAH, corner of Berkeley and Leicester streets.

- 1209 Pair Entire Hames
- 1210 Pair long Scotch Hames
- 1211 Pair short                   "
- 1212 Pair long Spring Dray Hames
- 1213 Pair American                   "
- 1214 Pair short Spring Dray Hames, double loop
- 1215 Pair short                   "                   "                   with chains
- 1216 One Buggy Saddle-tree
- 1217 One Carriage Tree
- 1218 One Bow
- 1219 One Spring-Dray Tree

## HATTON, JOHN, 4 Elizabeth-street North.

- 1220 Six pairs Greyhound Slips of an improved make—two made after Parker's patent, four made of improved make; one made of Horse-nail Stubs; all made in Melbourne
- 1221 One set of Waggonette Harness, single

## KENNEY, CAPTAIN, Bathing Ship, St. Kilda.

- 1222 Saddle

## MAPPIN, TAMILLAS, Hargreaves-street, Sandhurst.

- 1223 American Harness

## MITCHELL GRAHAM, Bourke-street West.

- 1224 Single-web Stirrup-leather, and Buckle Stirrup-iron
- 1225 Horse Condiment

## O'DONOGHUE, PATRICK, 103 Queen-street.

- 1226 Patent American Horse Collars—the Kay Dollar, the first made in the colony

## RIGBY, JOHN EDWARD, 92 Queen-street.

- 1226A Set of American Trotting Harness (colonial made)
- 1226B Set of ordinary Buggy Harness, made by apprentices under 21 years of age
- 1226C Set of ordinary Cab Harness

## VEITCH, WALTER, Geelong.

- 1227 One set Superior Gig Harness
- 1228 One set Suspension Buggy Harness





## CLASS III.—FANCY LEATHER.

**ALLCHIN, DIXON & CO.,** Flemington Bank, Macauley-road, Hotham.

1229 Japanned and Enamelled Leathers

1230 Japanned Leathers in Colours

**EVANS, J. W.,** 11A Flinders-lane West.

1231 Address Case of Inlaid Leather, original design, exhibited as Specimen of Finishing

**POWNCHEY, JOHN,** 45 Swanston-street.

1232 Glass Case with Specimens of Bookbinding:—Dante's "Inferno," morocco; Longfellow, morocco; Cornwall, morocco; Shakespeare, 7 vols, kangaroo; Butler, 2 vols, free calf; Herbert, calf; Beattie and Thomson, half-calf; Goldsmith and Thomson, half-morocco

## CLASS IV.—BOOTS AND SHOES.

## EXPERTS:

<b>R. Burrows, Esq., M.P.</b>		<b>D. Bedggood, Esq.</b>		<b>A. Anderson, Esq.</b>
<b>A. Callaway, Esq.</b>		<b>Hugh Thompson, Esq.</b>		

**AULD BROTHERS,** 146 Little Collins-street West.

1233 Ten pairs of Men's, Women's, and Children's Colonial Manufactured Boots

**BEER, THOS. POPE,** 57 Little Collins-street East.

1234 Case of colonial-made Boots and Shoes

**BREARLEY BROTHERS,** 225 Elizabeth-street, and Malop-street, Geelong.

1235 One Show Case of Manufactured Boot Uppers. The leather is composed of crop, kip, calf, and a little of other dressed goods

**BROUGHTON, JOHN H.,** 172 Elizabeth-street.

1236 Manufactured Boot and Shoe Uppers

**CARSON, DAVID,** 93 Swanston-street.

1237 Boots, colonial manufacture

**COX, M. J.,** 164 Russell-street.

1238 Boots

**DENNIS & LAIRD,** 5 Post-office Place.

1239 Boot Uppers

**FRANKFORT BOOT FACTORY,** 45 George-street, Fitzroy.

1240 Pair of Lady's Lasting Boots, sewn, pump bottoms (imitation German)

**LINDEGARD, WM.,** Stanley, near Beechworth.

1241 Pair of Gold Miner's Sluicing Boots



LINKLATER, DAVID, 6 Faraday-street, Carlton.

1242 Case of Boots and Shoes

M'GUIGAN, JOHN, 19 Collins-street East.

1243 Ladies' and Gentlemen's Boots and Shoes, all made on customer blocks

PENAL DEPARTMENT, INSPECTOR-GENERAL.

1244 Glass Case with 5 pairs of Boots

ROSIER, JOHN, 46 Swanston-street.

1245 Glass Case containing variety of Boots and Shoes

SMITH, JOHN MARTIN, 23 Little George-street, Fitzroy.

1246 Colonial-made Machine-sewn Boots

STENBECK, C., 3 Cardigan-street, Carlton.

1247 Boot Uppers

ULLATHORNE & CO., 74 Little Collins-street East.

1248 Small case English-made Closed Uppers of Boots

WHITE, RICHARD, 92 & 94 Young-street, Fitzroy.

1249 Colonial-made Boots and Shoes

WHITEWAY, MASON, & BUTT, 3 Elizabeth-street.

1250 Boots and Shoes

#### CLASS V.—PORTMANTEAUS.

##### EXPERTS :

Hon. T. Loader | Captain Standish | M. Buckley, Esq.

FRENCH, F. S., 204 Lonsdale-street East.

1251 Portmanteaus, various

LEIGHTON, JAMES, 30 Swanston-street.

1252 Three Covered Leather American Trunks

1253 Three Solid Leather Portmanteaus, English make

PAUSACKER, EVANS & CO., 10 Lonsdale-street West.

1254 Solid Leather Lady's Trunk, with fittings

1255 Solid Leather Gent's Portmanteau

#### SECTION II.—WOOL.

##### SECTIONAL COMMITTEE:

Hugh Parker, Esq., Chairman.

J. MacBain, Esq.

Sir Francis Murphy

The Hon. W. H. F. Mitchell

The Count de Castelnau

O. Fenwick, Esq.

C. E. Bright, Esq.

##### EXPERTS :

G. Arnold, Esq.

W. Hick, Esq.

James Dodgshun, Esq.

Jules Renard, Esq.

F. Spiro, Esq.

J. L. Currie, Esq.

THERE is a difficulty connected with writing an introduction to the exhibit, inasmuch as it is necessary to confine a subject which affords





material for a volume within the limits of a few pages. The wool trade of Victoria may be second in importance to the gold-mining interest in so far as regards the actual amount of money realised for the products of the two "industries," but it is only in that aspect that the claim of gold to priority can or should be conceded. As a permanent and secure occupation, that of the wool-grower is far in advance of any other business to which capitalists can turn their attention, and if the realisation of solid fortunes is to be taken as the test, our gold-mining must be placed second to squatting. No doubt there have been instances, and numerous ones, of "fortunate Sandhurst quartz-reefers," and equally successful holders of interests in the alluvial leads of Ballarat, but the "luck" of such men will not compare with the certain prosperity which has on the whole attended the investment of money in pastoral pursuits. There is little or no "chance" connected with the prospects of the man who judiciously embarks his capital in sheep. While he sleeps the wool and mutton grows, and the history of squatting in Victoria shows that success is the rule and failure the exception, and where the latter has been the case the misfortune has generally been attributable to a want of experience, or else a spirit of enterprise which was in advance of the means available to back it up. Squatters have recently been charged with being "the most short-sighted, close-fisted, and unenterprising men under the sun," but such an accusation could only have been made in ignorance of the character of the men who were thus traduced. The trail of their enterprise can be easily followed from Hobson's Bay almost to Cooper's Creek, and even beyond that point they are invading the inhospitable waste places of the interior of Australia. Their "close-fisted" manner of conducting their business may be perceived in the improvements which have subdivided the runs of Victoria, and the vast plains of Riverina, into sheep-paddocks, formed flourishing stations on "back blocks," which, a few years since, were considered inaccessible, and in other ways turned the wildernesses of Australia into fruitful pastoral fields.

While extending their operations in these directions, the squatters have not overlooked the fact that their prosperity depended as much, or perhaps more, upon the quality of their products, than on the extent of their possessions. They have therefore given considerable attention to the improvement of their stock, and the result is that, at the present time, the sheep and wool of Victoria and Riverina are superior to what has ever been the case since the settlement of Australia. It would be a tedious, and perhaps uninteresting task, to trace the history of Australian wool from the time that Mr. M'Arthur imported the first merino sheep, about half a century ago, and it will therefore be more to the purpose to confine these remarks to a few observations arising out of current circumstances. Having mentioned Mr. M'Arthur and his original importations, it may as well be stated that time has proved that the merino is the sheep for Australia, for, after much expense and many experiments, this has come to be practically admitted. About twelve or fourteen years since the opinion began to prevail that the old original stock could and would be improved by the

introduction of foreign blood, and as there is never a demand for any novelty without there being a speedy supply provided by speculators, the squatters were soon placed in a position to gratify their experimental proclivities. Importations of Rambouillet and Negretti rams took place, followed by shipments of Steiger's, and selections from other celebrated continental flocks, and at the sales of the sheep in Melbourne high prices were realised, and still higher expectations were formed as to the improvements in the quality of Victorian wool which would follow the introduction of the fashionable continental blood into the old-fashioned merino flocks of Victoria, and the Victorian possessions in New South Wales. A brisk contention was carried on between the advocates of each of the new "strains," especially as regarded the Rambouillet and Negretti sheep; but time has told its tale, and the large majority of those who disagreed about them then have now come to the conclusion that they would have been as well or better off without either of them, it being the opinion of many of our best and most experienced breeders that the old stock imported by Sir James Macarthur, and improved by judicious selection, is at this time the best in Australia.

Of late the Lincoln and other sheep of long-woolled breeds have come into notice, and at the show of the National Agricultural Society which was held in Melbourne in last October, the pens containing these sheep were "rushed" by those who wished either to satisfy their curiosity or invest their money. The interest taken in the sheep did not, however, reach that which was previously manifested with respect to the Rambouillet and Negretti importations, and it is not probable that the latest favourites will materially or permanently interfere with the claims of the merinoes to be regarded as the best sheep for general Australian purposes. There are portions of Victoria where the long-woolled breeds may be cultivated with profit, but though they may suit the purposes of gentlemen who indulge in fancy sheep-farming, they are not likely to find their way to the large runs of Victoria, or the still more extensive stations of Riverina.

With respect to the latter class of wool-producing properties, their contributions to the Exhibition must not be taken as an indication of their importance. The exhibits from the stations in Riverina are few, but this does not do away with the fact that the predictions of a few years since have not been verified. The opinion was held that wool of a superior quality, and in reasonable quantity, would not be produced on the northern runs of Riverina, but the consignments from the Upper Darling and intermediate stations of late years have shown that it only required proper management to produce as good average wool in these localities as is grown on the general run of Victorian stations. This is a matter of some importance to the future of the wool trade, for the progress of agricultural settlement tends to the conclusion that the time is approaching when we shall have to depend to a great extent upon the runs of the interior for the production of the great staple of Australia.

In connection with this view of the future, it may be remarked that during the past few years there has been an increasing decrease in the shipments of wool from Victoria. Messrs. Goldsbrough and Co.'s





monthly circular for October of this year shows that the falling off this season has been 8325 bales, and without going into the details of this decrease it may be assumed that the free selections in Victoria have something to do with it, though there are, no doubt, other reasons to be given for it. Squatters have come to regard quality with more favour than quantity, and besides this, the demand of the meat-preserving companies has kept down the stock on the stations. There are other circumstances which might be cited in explanation of the falling off in the shipments, but they would not disprove the fact that there has been a decrease in the production.

This falling off in quantity does not, however, involve a decrease in the returns which will be received in hard cash, as they will be in excess of last year's receipts, and that, it is anticipated, by a considerable amount. The wool trade thus proves the somewhat anomalous proposition that its prosperity is increased by a more limited production than that of previous years. The fact is, that a few years since, squatters were swamping themselves by overstocking their runs; but having perceived the folly of such a course, they have ceased to keep their stations stocked up to starvation point, and they have discovered that as the supply of mutton and wool has been restricted and improved their profits have increased.

It must be admitted that the present condition of the wool-producing interest, and also of the wool market, are satisfactory, and while this is the case there is no reason to apprehend that the existing prosperity is likely to be of short duration. It rests upon a foundation which is not likely to give way while the stomachs of the world are available as a market for the beef and mutton of Australia. There is no doubt that meat-preserving has been the salvation of squatting, and it came to the rescue at a time when the fortunes of squatters were in as precarious a position as they had ever been before. The discovery of gold was a very opportune relief for them at the time it took place, and its beneficial influence was felt for a number of years. The market which was thus created, however, was a limited one, and the consequence was that the increase of stock soon outran the requirements of the population, and there was every prospect that the old and ruinous relief of "boiling-down" would have to be resorted to. At this juncture, however, meat-preserving interfered, and instead of having a market opened up, the demands of which were limited to supplying a few hundred thousand mouths, as was the case when the diggings broke out squatters can now count their customers by millions, and the demand, for their "beefs and muttons" must inevitably keep down the supply and keep up the price of wool. With the world for a market, the squatting interest is not likely to see a recurrence of those "dull times," when carcass meat was sold in Melbourne at the rate of a few farthings per pound for beef, and an equally fractional price for mutton. These considerations justify the conclusion that the future of the wool trade is not likely to be less satisfactory than its present prosperous condition.



- ALBION WOOLLEN MILL COMPANY, Geelong.  
 1256 Plain and Fancy Tweeds, in the piece  
 1257 Woollen Shawls
- ARMSTRONG, ALEX., Warrambeen, Shelford.  
 1258 Fifty Ewe Fleeces, greasy and skirted  
 1259 „ Lamb „ washed „
- AUSTIN, T. & A., Eilyer, Lake Bolac.  
 1260 Ten Fleeces of Lincoln Wool
- CARTER, SAMUEL, Cavendish.  
 1261 Fifty Fleeces Hogget Ewes, Merino Breed, 365 days' growth of wool, hot-water washed and spouted; 50 fleeces Lamb's, Merino Breed, 183 days' growth of wool, hot-water washed with spouts
- CHENERY, ALFRED, Loyola and Delatite Stations, Mansfield.  
 1261A Sample 50 lbs. sorted Lincoln Wool, in grease, from ewes with lambs at foot, growth 11 months 20 days, sheep bred and depastured on Loyola Estate
- COOPER, MARGARET, 25 North-street, Richmond.  
 1262 Fancy Wool Mats
- CURRIE, J. S., Lorra, Lismore.  
 1263 Two Fleeces Merino Wool, Ewe, of an entirely new type, long, straight, and lustrous, about 350 days' growth
- DOCKER, F. G. & J. B., Bontharambo, Wangaratta.  
 1264 Two Angora Goats' Skins
- DOWLING, THOMAS, Darlington.  
 1265 Fifty Ewe Fleeces, washed in hot-water, 350 days' growth
- EVANS, D. H., Beechworth.  
 1265A Fleece
- GILL, G. D., Victoria-crescent, East Collingwood.  
 1266 Scoured Wool
- GREEVES, E. D., Skipton.  
 1267 Fifty Fleeces, 4-tooth Ewes, hot water washed and spouted
- GRIFFITH & GREENE, Mount Hope, Durham Ox.  
 1268 Fifty Fleeces Greasy Wool, Yearling Ewes, 330 days' growth
- HAY, GEORGE, care of Mr. Manifold, Dandenong-road.  
 1269 Hearthrug, composed of different pieces of cloth, made with a marline-spike, and without sewing
- HENTY & NEILL, Round Hill, Albury.  
 1270 Washed at 80° temperature, 1-lb. of Soft Soap to every 100 sheep, 11½ months' growth for Hogget Wool, 5 months' growth for Lambs' Wool
- KELSALL, JOHN, 47 Mair-street, Ballarat.  
 1271 Bale of Scoured Skin Wool, 100 lbs  
 1272 Keg of Tallow, 56 lbs





## LOMAX, H. G., Hay, N.S.W.

- 1273 Bale of Scoured Wool, 200 lbs weight, First Clothing  
 1273A Bale of Wool, first clothing extra

## MANUEL, M. E., rear of 91 Cardigan-street, Carlton.

- 1274 Glass Shade containing Wool Flowers

## PENAL ESTABLISHMENTS, INSPECTOR-GENERAL OF.

- 1397 Two single Blankets  
 1398 One pair Blankets  
 1399 Mats, Wool and Coir

## ROBERTSON, A. L., Struan.

- 1275 One Case Sample Wool  
 1276 One Bale Ewe's Wool  
 1277 " " Wether's  
 1278 " " Lamb's

## ROBERTSON, A. S., Geelong.

- 1279 Glass Case, Samples of Wool  
 1280 Three Bales of Wool, bred in and in for the last 15 years, on the dry plains of Lismore—351 days' growth of Ewe's Wool, 350 days' growth of Wether's Wool, 5 months' growth of Lamb's Wool

## ROWE, JOHN P., Mount Battery, Mansfield.

- 1281 Five Fleeces of Angora Goat's Wool  
 1282 One Bale of Australian Lincoln Fleece

## RUSSELL, PHILIP, Carngham.

- 1283 One Bale of 50 Fleeces Washed Wool, 365 days' growth  
 1284 " " " Wool in grease  
 1285 " " " Washed Hogget Wool  
 1286 " " " Hogget Wool in grease  
 1287 " " " Wether's " "  
 1288 " " " Washed Lamb's Wool  
 1289 " " " Lamb's Wool in grease [hot washed  
 1290 " " " Ewes of mixed ages, with Lamb at foot,  
 1291 " " " " " "  
                   in grease  
 1292 " " " hot washed Hogget Wool  
 1293 " " " Hogget Wool in grease  
 1294 " " " hot washed Wether Wool  
 1295 " " " Wether Wool in grease  
 1296 " " " hot washed Lamb's Wool  
 1297 " " " Lamb's Wool in grease

## RUSSELL, THOMAS, Wunook, Rokewood.

- 1298 Bale of Fleece Wool (skirted), in grease  
 1299 Bale of 50 Fleeces, with pieces taken off from young sheep, and in the grease, about ten days less than twelve months' growth

## RUSSELL, THOMAS, &amp; CO., Barunot Plains, Hesse.

- 1300 Bale of Hot-water washed Fleece Wool, 375 days' growth

- 1301 Bale of Wool in grease, 360 days' growth  
 1302 Bale of Lambs' Wool  
 1303 50 lbs. of Wool  
 VICTORIAN WOOLLEN MANUFACTORY, Geelong.  
 1304 Cloths and Tweeds  
 WILLIAMSON, JOHN, & CO., 86 Elizabeth-street.  
 1305 Curled Hair  
 WILSON, SAMUEL, Oakleigh Hall, East St. Kilda.  
 1306 Bale of 50 Fleeces, Wethers, washed with hot water and spouts,  
 365 days' growth  
 1307 Bale of 50 Fleeces, Ewes, about 370 days' growth  
 1308 „ „ Hoggets 300 „  
 1309 „ „ Lambs 150 „  
 TRUSTEES OF INDUSTRIAL AND TECHNOLOGICAL MUSEUM.  
 1310 Blanket and Shawls manufactured from Victorian Wool  
 1311 Case of Samples of Wool from the prize sheep exhibited by C. B.  
 Fisher at the Adelaide Shows, 1871

### SECTION III.—WOOD.

#### SECTIONAL COMMITTEE :

W. W. Wardell, Esq., Chairman.  
 W. Williams, Esq. | S. Ramsden, Esq.

#### EXPERTS :

W. Porter, Esq.	Hon. T. Loader, Esq.	E. Ashley, Esq.
J. Rawlings, Esq.	W. Finlay, Esq.	— Rowan, Esq.
C. S. Ross, Esq.	A. C. Todd, Esq.	S. Solomon, Esq.

Of the primary natural productions of the colony, timber undoubtedly holds the second place in importance, if, indeed, it does not challenge with gold the first place, for although the actual value of the gold produce many times over exceeds the value of the woods which in various forms and varieties find their way into the market, it is fairly open to question whether the colony could not better afford to be without its gold-fields than without its forests, for if the first have attracted population to our shores, it is to the second that this population owes a very large proportion of those appliances and comforts, without which life itself would be well-nigh unendurable.

In considering timber in its relations to the industrial resources of a country, as illustrated by an exhibition like the present, our attention must be directed and confined to two great subdivisions—firstly, the woods which are indigenous to the colony, and secondly, those which we are constantly in the habit of importing, in consequence of our having no convenient or suitable local equivalents.

The most valuable of our indigenous timbers is, without doubt, the red gum: this is a hard, dense wood, with a handsome curly grain; it is almost entirely free from the tendency to casting and longitudinal shrinkage which is the invariable characteristic of all the other varieties



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of the *eucalyptus*, and is almost indestructible in damp ground or in water, either salt or fresh ; its failings are a short grain which make it untrustworthy for horizontal bearing timbers in any but very short lengths ; it cannot easily be procured in long lengths and of a reasonable diameter, a point of some importance in piles, where it is desirable to have the whole section of the tree with its waning intact, and it does not split freely ; still it makes the best of all piles for engineering works, and it cannot be surpassed for any purposes, either in engineering or building, where a resistance to sheer downward pressure is desired ; it makes unequalled planking for bridges, wharves, or stores, and none but red gum sleepers are considered first-class, although it may be questioned whether the timber is not more expensive than is necessary for this purpose. Red gum posts, although rough, will last almost twice as long as those of other woods, and for spokes or felloes of heavy wheels it is the favourite wood with wheelwrights. In the form of firewood thousands of tons are annually consumed, as it forms a desirable fuel for engine purposes from its tendency to generate flame ; and numberless as are the uses to which the timber has been put, it is questionable whether it is not fit for many other branches of industry in which it has as yet scarcely found a place. Cut in the proper season, and properly protected from its tendency to sun-crack, it would be admirably adapted, after thorough seasoning, to make the heavier parts of furniture, such as the legs and rails of tables ; it takes a fine polish and cuts into beautiful veneers ; for knees and the rigid portions of ships' framing it is found of great value ; indeed, its possible uses are almost too various for enumeration, as an instance of which it may be mentioned that it is used with great advantage and economy for the bearings of machinery, the cost being almost nominal as compared with brass, and the material as far as experience goes is quite as serviceable. Not only for fixed bearings ; it has even been used for running portions ; a set of bearing blocks fitted to a horizontal engine having lasted for two years without the slightest sign of imperfection, being then only removed under an impression that prejudice against their presence might injure the sale of the engine, which at that time came into the market.

Following the red gum, we have the blue gum, the box, and the peppermint. The wood of all these trees is of a yellowish-grey tint, with a free, straight grain. It is of great strength and tenacity, and is to be procured in almost any lengths, and with that moderate equality of section which makes it so useful for piles, where the required length would render the use of red gum impracticable. Unlike the red gum, however, these are not impervious to the *teredo navalis*. For heavy longitudinal beams, the timber is admirably adapted from its flexible qualities, and the great bulk of the better quality of "sawn stuff" which comes into this market is of one or the other of these woods. Being split freely, these timbers make admirable and slightly rails. Although a good deal of affected knowledge is displayed as to these woods, it is difficult to distinguish them from one another with any degree of certainty. It is not too much to say that but little blue gum comes into the market, and that what does come is kept before the public in virtue



of the exceptionally good qualities of an imported article which no longer finds its way here, and which is, indeed, scarcely to be procured in quantity in its original habitat.

Stringy-bark, which still supplies a good deal of the second-class sawn timber in the market, is a similar wood to the box, but with a browner tint. It is, however, altogether an inferior wood, and is the worst of all the hardwoods in its tendency to twist and warp; besides which it has a more or less decided tendency to dry rot. It is, however, a free splitting wood, and is extremely useful for palings and shingles. Stringy-bark posts and rails are only second-class.

White gum may be set down as a thoroughly worthless wood, being not even fit for firing, from its tendency to burn black, without producing flame. It has a general tendency to early decay, so that it is seldom found sound at the heart; and, being shorter in the grain, does not split freely. It is scarcely ever used for engineering or building purposes, except in districts where it is the only available timber, and where the expense forbids the importation of woods from other districts.

Messmate seems to be a local term, for what is called messmate varies in different parts of the colony. What, however, is known as messmate near Melbourne is slightly superior to the white gum, in that the grain being straighter it splits with greater facility, and is used for second-class posts, rails, palings, and shingles. It is sometimes sawn, but is chiefly confined to wheelwrights' work, for reasons which do not seem to be perfectly clear.

The woolly butt and the bloodwood are two varieties of the *eucalyptus* peculiar to the eastern part of Gipps Land, where they are highly esteemed; they are, however, unknown in Melbourne. The same remark applies to the apple-tree, which comes from the same locality, where it is a favourite wood for wheelwrights' purposes.

The mountain-ash is another of the varieties of the *eucalyptus*. Staves split from specimens grown in the Beechworth District will be found in the present Exhibition; it is extremely flexible, and is employed almost exclusively in wheelwrights' work. It is not so well known in Melbourne, as from report it deserves to be. With the completion of the North-eastern Railway we shall probably see it taking a permanent place in the market.

There seems to be but little doubt that many of the varieties of the *eucalyptus* produce timber so much alike that one piece cannot well be distinguished from another, even when cut from trees having well-defined botanical distinctions; as a consequence the timber receives its name more from the fashion of the yard where it is sold, or the sawmill where it is cut, than from any well-grounded knowledge of the particular member of the family from which it has been sawn.

The blackwood and lightwood are two different woods, although most people regard the terms as synonymous; they are, however, so much alike in their characteristics, and so entirely alike in their uses, that they may be regarded as under one general name—blackwood. This is a magnificent wood for every description of cabinet work, as it has a beautifully-marked, richly-coloured grain, which takes a polish freely;





and gives an effect not even surpassed by walnut, to which it has many points of similarity. It is very close-grained and heavy, and is useful for all purposes where lightness, combined with strength and flexibility, are required. It is largely used by coachbuilders in every department of their trade.

The Murray pine is not much known in Melbourne; it is, however, a handsomely-marked, useful timber, which is used in the northern districts of the colony for almost every conceivable purpose; it takes a fine polish, and exudes a very pleasant aroma. Its defect is the frequency of somewhat coarse knots.

The myall is a smaller variety of the Murray pine; it is, however, more highly scented, and is only used for smaller articles of turnery and for wooden pipes, which are made for home consumption and for exportation in considerable quantities.

The iron-bark is one of the hardest and heaviest of our woods; in the colony, however, it does not grow to any large size; it possesses great strength and tenacity, and is consequently much used by coachbuilders and wheelwrights for shafts and spokes.

The wattle is esteemed for the value of its bark as a tanning agent; the use of its wood is almost universally confined to the manufacture of staves for casks; large quantities of it come into the market as firewood.

Sheoak is almost entirely used for firewood for domestic purposes; it does not flame, but burns down to an incandescent glowing mass, which makes it a peculiarly pleasant fuel for household purposes. This timber is occasionally used by cabinetmakers for the sake of variety.

The honeysuckle is another wood which is scarcely ever used except for fuel, although, like the sheoak, cabinetmakers sometimes use it in small quantities, its markings being peculiar, and at the same time pleasing.

Fern-tree and pencil-wood are two new contributions to our material, which appear in the catalogue, the first being in the form of veneers.

The importation of timber into this colony forms a very large and important branch of trade, of the extent of which few persons have any conception. During the year ending 18th June, 1872, timber was imported to the value of nearly £300,000, and consisted of the following items:—Deals, No. 245,768; besides 1416 Standards, of 165 cubic feet each; squared logs, 526; sawn timber, cubic feet, 3,990,603; Sydney cedar, super feet, 1,947,466; Kauri pine, super feet, 1,860,000; flooring boards, running feet 15,187,202; Queensland pine, super feet 595,000; white pine flooring, super feet 807,263; American clear pine, super feet 1,244,195; white pine shelving, super feet 1,322,710; laths, bundles 19,815; and pickets, bundles 10,386; besides American machine-made doors to the number of 36,695, and machine-made sashes 7. Despite the imposition of heavy protective duties we have no resource but to continue this large importation, in consequence of the utter absence of all indigenous timber fit for the ordinary use of the builder and the carpenter.

The bulk of the timber imported into this market comes from the Baltic; it is almost entirely of red deal, and of the following scantlings,

known in the trade as deals:—12 x 4, 11 x 4, 11 x 3, 9 x 4, 9 x 3, 8 x 3, 7 x 3, and 7 x 2½. Very little log timber comes from the Baltic, and that only of inferior quality and small in size.

The ordinary grooved and tongued flooring of the timber yard is both of red and white deal, the latter, however, being in far the larger quantities; it is entirely from the Baltic, although much of it is prepared in England, and especially in Scotland, hence its name, "Scotch Flooring." The chief sizes are, in inches, 6 x 1½, 6 x ¾, 6 x ¾, 6 x ¾, 6 x ½, and 6 x ¾, the two latter sizes being imported both beaded and plain. Large quantities of weatherboards, 4 and 6-out, as they are technically called (that is 4 or 6 boards, as the case may be, cut out of a deal 7 x 2½), also find their way from the Baltic to this market.

American shipments from the Eastern States consist almost entirely of clear pine, pine shelving, and grooved and tongued lumber. Small parcels of pitch pine flooring, and immense quantities of laths and pickets, reach us from this source.

Canada sends us clear pine shelving, grooved and tongued timber, spruce flooring, and oak pipe staves, as well as laths and pickets in considerable quantities.

The Oregon trade is usually in large sizes of timber, and in long lengths, ranging in all sizes between 9 x 3 up to 24 inches square, and in all lengths up to as much as 90 feet; there is a large demand for this timber. Oregon also supplies us with large quantities of laths and pickets.

New Zealand sends us the Kauri and Totara pine, in large logs up to 5 feet square and in long lengths; this timber is much used for large work when Oregon happens to be scarce or dear in the market. New Zealand timber in its various varieties has not yet taken its proper place amongst us, or it might have, ere this, rendered us to a great extent independent of our immense European and American importations.

Queensland supplies us with a pine; it is a large-sized timber, but is an inferior wood to Kauri, being shorter in the grain; its colour comes out well under polish; it is almost entirely free from knots, which renders it a serviceable wood for many descriptions of joinery.

Cedar comes to us chiefly from the Clarence and Richmond Rivers, in New South Wales. This timber is too well known to need description; it is extensively used in the manufacture of all sorts of furniture, except that of the very highest class, for which it is being gradually superseded by blackwood.

The jarrah is imported from Western Australia, chiefly for use in the construction of harbour works, in consequence of its reputation for being impervious to the attacks of the *teredo navalis*; at present its price, which is fully 50 per cent. higher than red gum, the wood with which it more directly competes, almost prohibits its use, besides which there are difficulties in getting orders executed. One or two Victorian companies are now perfecting their arrangements for supplying the timber to the Indian and Victorian markets, so that the drawbacks will, it is hoped, be to a certain extent removed. This timber has not altogether



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answered the high character claimed for it; indeed, it is questionable whether it is more impervious to the attack of the teredo than our own red gum,\* and in a lengthy and universal condemnation of Australian timber lately passed by Mr. G. L. Molesworth, the Engineer-in-Chief of the Indian railways, jarrah is not only not excepted, but rather comes in for special condemnation.

The import of sawn timber from Tasmania has almost entirely ceased since the imposition of protective duties. The shipments from that market are now confined almost entirely to palings.

The disfavour which undoubtedly attaches to Australian timber is in a large measure owing to the fact that the timber is so frequently felled at improper seasons, whilst the sap vessels are full; and it is a matter for regret that this is never considered by the Government in calling for tenders; the completion of the work being often stipulated for at a time which leaves the contractor no alternative but to fell his timber after the sap has risen. Another cause of the disfavour is owing to the fact that due care is not exercised in sending the best sorts, besides which there is a general want of care in withdrawing faulty pieces from shipment.

It is to be regretted that no series of reliable experiments has ever been entered into for the purpose of testing the different varieties of Victorian timber, an elaborate series of experiments, conducted by the late Mr. J. M. Balfour, C.E., for the commissioners of the New Zealand Exhibition held at Dunedin in 1865, to which several hundred samples of the woods of Australia and New Zealand were submitted, giving the only reliable data for dealing with two or three of our better-known varieties, and this not entirely in a satisfactory manner, for not one of the specimens experimented upon in Dunedin was actually the produce of this colony. It appears, too, from Mr. Balfour's paper, giving the results of his experiments, that most of the woods of New South Wales were tested by Colonel Ward, the present master of the Melbourne Mint, in 1860-1; also that Captain Fowke, the architect of the London Exhibition Building of 1862, made some experiments with woods from New South Wales in 1855. The information derived from these experiments does not appear to be known in this colony.

It may be interesting to mention that the very first export of this colony, as far back as 1803, was timber. H.M.S. "Calcutta," which was one of the two ships which brought out the party which endeavoured to form a settlement on Point Nepean, was ordered to take home a cargo of timber fit for naval purposes. Before leaving the Bay, Captain Woodriff shipped 150 pieces of what Lieutenant Tuckey, the historian of the expedition, calls timber compass, the which, he goes on to inform us, was chiefly honeysuckle. History is silent as to the use made of this valuable consignment of shipbuilding timber.

\* At Warrnambool one row of red gum piles inserted about the middle of the jetty, all the rest being of jarrah, is absolutely untouched by the teredo, which had attempted the jarrah, but not finding it to its liking had speedily retreated, after merely vermiculating the surface.



(The following exhibits, from No. 1312 to No. 1323 inclusive, are exhibited by the TRUSTEES OF THE INDUSTRIAL AND TECHNOLOGICAL MUSEUM, and form part of the Technological Museum.)

- 1312 Western Australian Woods—Sandalwood, Jarrah (figured), York Gum, Jarrah (plain), Jarrah (excrescence), Jam Wood, Tuart, Sheoak, Banksia
- 1313 Pick Handles, Spokes, &c., in colonial woods, by J. Perry
- 1314 Ceylon Woods, Collection of
- 1315 Frame showing Use of Colonial Wood in Manufacture of Wheels, Felloes, and Spokes
- 1316 Log of Wood, with Copper Bolts, showing the ravages of the Salt-water Worm
- 1317 Two Photographs of Oregon and Californian Timber Trees
- 1318 West Australian Wood—Models of New Zealand War Canoe, and of a Whale and Surf Boats
- 1319 Wood Tapestry—Case of Specimens made from Austrian woods
- 1320 Charcoal—Two cases of Charcoal from Australian woods
- 1321 Australian Woods—Box of Specimens, by J. Cuthbert, Sydney
- 1322 Colonial Woods—Four Racks with classified Specimens of
- 1323 Furniture Woods—Case and Specimens of

#### INTERNATIONAL EXHIBITION, Commissioners of.

- 1324 Timber and Fern Specimens
- 1325 Log Sassafras, 16 feet by 1 foot
- 1326 Log Australian Beech, 13 feet by 1 foot 6 inches
- 1327 Fern, 20 feet long
- 1328 Fern Log, 8 feet long
- 1329 Log Peppermint, 10 feet by 9 inches
- 1330 Log Dogwood, 10 feet by 9 inches
- 1331 Twelve Fern Fronds, 13 feet to 16 feet long
- 1332 Portfolio, containing Collection of Ferns
- 1333 Ten Palings, 6 feet 6 inches by 9 inches broad
- 1334 Billet Mountain Ash
- 1334A Pile of Jarrah Wood

ALCOCK & CO., 132 & 134 Russell-street, Melbourne.

- 1335 Samples of Timber—Blackwood, Huon Pine, Cedar, Red Gum, &c.
- 1336 Billiard Table, made of the first timber imported by Capt. Calder, of the steamship "Omeo," from Roper River, Port Darwin
- 1337 Billiard Table, made of handsome grained blackwood, Revolving Cue Rack, Combination Pool and Billiard Marking Board
- 1338 Patent Combination Dining and Billiard Table

ALLAN, ANDREW, 12 Little Collins-street, Melbourne.

- 1339 Fishing Rods, Tackle, &c.

ATTREE & CO., Stanley, Beechworth.

- 1340 Sawn Shingles, wood grown at Stanley, cut at Messrs. Attree and Co.'s Saw Mills, Stanley, near Beechworth

BARRETT & MASON, 160 Swan-street, Richmond.

- 1341 Six Easels (black boards)





- 1342 Six T Squares  
 1343 Two Table Easels  
 1344 Four Drawing Boards  
     BLAZEY, W. R., 14 & 16 Bridge-road, Richmond.  
 1345 Pianoforte  
     BROWN, G., Wodonga.  
 1345A Myall Wood  
     CARR & SONS, 128 Spring-street, Melbourne.  
 1346 Window Blinds  
     COOKE, E. N., Franklin-street West, Melbourne.  
 1347 Cedar Sideboard, 7 feet 6 inches wide, with plate-glass back  
     COMPTON, WILLIAM JOHN, East Trentham, Kyneton.  
 1348 A 3-feet-square pattern of various Woods, arranged for passage,  
     or greenhouse flooring, similar to tessellated  
 1349 A 3-feet-square Roofing of Shingles, and samples of 3-feet and 2-  
     feet shingles  
 1350 Sample of Fern-tree, sawn to show the grain for veneering  
 1352 Model of a Bark and Slab Bush Hut  
 1353 Five Models of various kinds of Fences  
 1354 Sample of Split Stringy Bark Timber, 6 ft. high and 18 in. by 3 in.  
 1354A Sample of Roofing Bark  
     CUMMINGS, HENRY & CO., 46 Elizabeth-street, Melbourne, and  
     River Don, Tasmania.  
 1355 Casks made by machinery  
 1356 Samples of Blackwood, Myrtlewood, and Gum  
 1357 Samples of Coal, Ironstone, and Limestone  
     DRAPER & SON, 83 Bourke-street West, Melbourne.  
 1358 Two Earth-Closets.  
     EFFEY, CHARLES, 16 Little Collins-street East, Melbourne.  
 1359 Drawingroom Suite with Centre Ottoman  
     ELLIS, WILLIAM, Hillsborough, near Beechworth.  
 1360 Samples of Wood grown at Hillsborough—Wood suitable for  
     Wheelwright Purposes, Heads of Casks, Coffin Boards,  
     Coopers' Staves and Tilts  
     FISH, WILLIAM,  
 1360A Two Blocks in a frame  
     FORREST & LOCKHART, 218 Drummond-street, Carlton.  
 1361 Drawingroom Suite of Furniture in Colonial Lightwood, Uphol-  
     stered in Silk  
 1361A Various Chair Frames in Colonial Woods  
     FOY, JOHN, Bickleigh Vale, Hawthorn.  
 1362 Rustic-Chairs and Tables made of various Colonial Woods  
     FRENCH, CHARLES, Botanical Gardens, South Yarra.  
 1363 Glass Case of Wood Specimens, &c., showing effects of ravages of  
     insects. Collected around Melbourne

GOULBURN SHIRE COUNCIL, per NICHOLAS DELANEY, President.  
 1364 One Sample Red Gum Timber

GRAY, WARING & CO., Phoenix Steam Cooperage, Prince's Bridge.

1365 Three Large Wine Casks

1366 Tallow Cask

1367 Curd Tub

1368 Three Cheese Vats

NOTE.—Tallow Cask made from Blackwood, all the others made of imported Oak

HARPER, JAMES, 112 & 114 Brunswick-street, Fitzroy.

1369 Blackwood Sideboard, with Plate-Glass Back

1370 Blackwood Dining Room Suite, covered with Colonial Morocco Leather

HEWITT, WILLIAM, South Yarra.

1371 Lady's Work Table (inlaid), made of Colonial wood

HEATHCOTE SHIRE COUNCIL.

1372 Axe Handles, from colonial wood.

HIGGINS, —, 18 Little Collins-street East, Melbourne.

1372A Self-Acting Disinfecting Closet, and Patent Disinfecting Powder

HODGSON BROTHERS, View-place, Sandhurst.

1373 Show Case containing one Patent Self-acting Venetian Blind and Spring Roller Blind

INGLIS, DANIEL, 123 Flinders-street West.

1374 Ship Blocks

1375 Ship Block Sheaves } Colonial Manufacture

1376 Samples of Port Darwin Lignum Vitæ

1378 Sample of Honduras Lignum Vitæ

JOHNSON, W., Stanley, near Beechworth.

1379 Split Staves and Shingles

KILNER, JOSEPH, Bridge-street, Richmond.

1380 Pianoforte Bichord in Mottled Kauri, Patent Tension Props, Bridges, &c.

1381 Cottage Grand Pianoforte, Trichord, in Blackwood Case, improved Sounding Board and Action, Patent Bridges, &c.

KNIGHT, GEORGE, Beechworth.

1382 Section of Red Box, grown at Beechworth

KNIGHT, J. G., Hall of Commerce.

1383 Specimen of Creosoted Hardwood, by a process discovered by exhibitor

1384 Specimen of Musk Wood, chemically transformed.

LLOYD & SON, 2 Bond-street, Melbourne.

1385 Patent Venetian Blinds, in cases

MATTHEWS, WILLIAM, 150 Clarendon-street, Emerald Hill.

1386 Piano manufactured of Colonial Material, and made in Victoria.



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- MAIR, WILLIAM, 199 Clarendon-street, Emerald Hill.
- 1387 Model Canary Cage
- MILTON, J. T., Nott-street, Sandridge.
- 1388 Complete Set of Cork-cutter's Tools, and Samples of Colonial Manufactured Bungs and Corks
- 1389 Sheet of Cork Wood as stripped from tree
- 1390 A Sheet of Cork after the Process of Burning
- MOURANT, JOHN TIMOTHY, 77 Oxford-street, Collingwood.
- 1391 Wooden Taps
- PASER & SIMONSEN, 125 Russell-street, Melbourne.
- 1392 Blackwood Billiard Table with Fittings
- 1393 Lady's Work Box
- PENAL ESTABLISHMENTS, INSPECTOR-GENERAL OF,  
Melbourne.
- 1394 Garden Seat
- 1395 Baskets
- 1396 Umbrella Stand
- PERRY, JOHN, 85 Lonsdale-street East, Melbourne.
- 1400 Collection of Bent Timber and Turnery for Carriage Manufacture and other purposes
- PINI & CO., Stanley, Beechworth.
- 1401 Specimens of Ornamented and Building Timber growing at Stanley—cut at Saw Mills
- POOLEY, HUMPHREY, Barnawartha, near Chiltern.
- 1402 Staves from the Mountain Ash, grown at Mount Yarramanbulla, Yackandandah, near Beechworth—adapted for making Casks, &c.
- PORTA, JOSEPH, 146 Little Lonsdale-street East, Melbourne.
- 1403 Common, Second, and Best House Bellows, 11 pairs of various descriptions
- 1404 Pair of Blacksmith's Bellows, with frame
- 1405 Pair Double-action Cylinder Bellows, with frame
- 1406 Twenty-one Fancy Bellows
- ROCKE, W. H., & CO., 40 & 42 Collins-street East, Melbourne.
- 1407 Large Centre Ottoman
- 1408 One Drawing Room Suite, consisting of Sofa, six Chairs, two Easy Chairs, upholstered in Bismarck and Gold Brocaded Silk
- SHEEDY, JOHN, Somerset-street, Richmond.
- 1409 Loo Table, made of Colonial Wood
- 1410 Small Cottage made of Shells, Glass, and Everlasting Flowers, enclosed in a Glass Case made of Colonial wood
- 1411 Loo Table of Colonial Wood (3800 pieces)
- 1411A Two Pieces of She-Oak, Red and White
- SHIRE OF WINCHELSEA.
- 1412 Pencil Wood, in log, cut down the centre



- SIMPSON BROTHERS, Stanley, near Beechworth.
- 1413 Samples of Woods growing at Stanley, cut at the Stanley Saw Mills
- STEWART, JAMES, Emerald Hill.
- 1414 Model Shutter
- TURNBULL, THOMAS, Richmond.
- 1415 American Churns
- VORRATH, W., 94 Swanston-street, Melbourne.
- 1416 A Sofa
- WHITELAW, THOMAS, 26 Sturt-street, Ballarat.
- 1417 Imitation of Inlaid Woods, consisting of seven specimens
- WINCHELSEA SHIRE COUNCIL—by JOHN ELKINGTON, Secretary.
- 1419 One log of Pencil Wood (a species of lightwood), cut in the Cape Otway Forest, the surface of the sawn portion polished to show grain
- WINGROVE, E. S. (Secretary of the Eltham Shire Council), Eltham.
- 1419A Samples of Ironbark, Stringybark, Messmate, and Yellow Box, from the Eltham District, and taken from Timber used in the construction of Bridge over Diamond Creek

#### SECTION IV.—ORES, BUILDING STONE, AND COAL.

##### SECTIONAL COMMITTEE:

Hon. Wm. K. Vale	Samuel Ramsden, Esq.	
Hon. J. T. Smith	Hon. C. J. Jenner	J. B. Patterson, Esq.
	James M'Bain, Esq.	W. W. Wardell, Esq.

##### CLASS I.—ORES, &c.

##### EXPERTS:

W. Birkmire, Esq.	R. H. Bland, Esq.	W. Patterson, Esq.
G. H. F. Ulrich, Esq.	W. K. Thompson, Esq.	H. Y. I. Brown, Esq.
	R. M. Sergeant, Esq.	

The objects shown in this division of the Exhibition afford but little attraction to the casual observer, but are nevertheless entitled to the serious attention of all who interest themselves in the progress and development of the useful arts.

Whatever tends to increase the producing power of the Australian colonies, either in raw or manufactured materials, necessarily adds to the wealth and independence of the general community, and renders us less dependent on foreign supplies.

The richness of Victoria in precious metals is now historical, but it is to be regretted that comparatively little attention has hitherto been given to the production of other minerals, which are as valuable in the industrial arts as gold or silver.

The ores of iron, tin, copper, lead, and antimony are more or less plentifully distributed, the latter having recently been found within ten





miles of Melbourne. Clay of various qualities is abundant. Lime and building stones are generally obtainable in the neighbourhood of all populated districts; and we have, at length, a fair prospect of being supplied with Victorian coal.

**IRON ORE.**—Many varieties of iron ore are to be met with in Victoria; at the Moonee Ponds, Mordialloc, on the banks of the Saltwater River, on most of the goldfields, at Western Port, and many other places. It has not yet, however, been discovered under such highly favourable conditions as exists in Tasmania. The samples exhibited by the Tasmanian Charcoal Iron Company, Limited, indicate the commencement of a new era in our industrial progress. This company has obtained a lease of 400 acres of land, on which an immense and compact mass of ore is visible, upwards of 700,000 tons cropping out above the water level. The works are about four miles from the wharf on the river Tamar, and are being carried out with vigour; a tramway is being laid, and a jetty carried out, to secure fifteen feet of water for shipping. Abundance of timber is on the ground for smelting, as also limestone, clay, and free-stone. It is intended to manufacture charcoal iron. The ores consist of magnetite, and magnetic oxide of iron, crystallised, and brown hematite, and yield by analysis 70 per cent. of metal.

The iron ores from the Cleveland Hills, in Yorkshire—one of the most prolific districts in England—contain not more than 33 per cent. of metallic iron. The materials used in making a ton of pig iron are—iron stone, 3 tons 3 cwt.; coke, 1 ton 10 cwt.; coal, for boilers, &c., 4 cwt.; and limestone, 13 to 15 cwt. The iron ores usually worked in Great Britain and abroad produce from 30 to 50 per cent. of metal. It may be mentioned that one single firm, Messrs. Baird, in Scotland, manufacture upwards of 300,000 tons per annum, which at its present value of £6 per ton, equals £1,800,000. In 1869 there were raised in the United Kingdom 11,656,241 tons of iron ore; this was converted by 596 furnaces into 5,445,757 tons of pig iron, which is more than was yielded by all the other iron-producing countries in the world.

The superior richness and purity of the Tasmanian ore, contrasted with that of England, will go far to make up for the enhanced cost of its manipulation, in addition to which the great rise which has taken place in the price of iron is highly favourable to the pecuniary success of this new colonial enterprise. So great, indeed, is the scarcity of this metal that old scrap iron fetches £8 10s. per ton, while pig iron of average quality is worth £10 per ton in Melbourne.

**CLAY.**—Victoria is rich in various kinds and qualities of clay, embracing the common descriptions used for bricks and tiles, fire clays, the clays employed for ordinary pottery, as well as the purer varieties called china clay, or kaolin, adapted for the manufacture of chinaware and porcelain.

The utility of these mineral substances in the industrial arts cannot be over-estimated, while clay in its natural state is invaluable to the civil engineer in the construction of dams and reservoirs in forming the cheapest known medium for resisting the percolation of water.

The progress which has been made in the manufacture of colonial bricks since the last Exhibition is highly creditable to those engaged therein.

Particular mention may be made of the Hoffman's Brick Company, at Brunswick, where the employment of extensive machinery and drying plant have resulted in the production of a dense vitreous brick, admirably adapted for general building purposes.

Twenty years ago bricks sold at £18 per thousand. They were usually miserable rubbish, half sand, and ill burnt. At the present time the best ordinary bricks, vastly superior to those used in London, fetch from £1 15s. to £2 per thousand. Moulded bricks and tiles, for cornices, &c., made of white clay, are now largely employed in house building, and add considerably to the means of the architect for producing good effects. Especial praise is due to Mr. Cawkwell, of Malvern, for his steady perseverance in the manufacture of terra cotta ware.

Many of our beds of clay are exceedingly suitable for the production of fire bricks, while large areas contain clays admirably adapted for the making of drain pipes and stoneware pottery of various kinds. Large deposits of potters' clay exist on the land belonging to Mr. J. H. Clayton, at Box Hill, Nunawading, from which Dahlke's filters are being made. Other beds have been opened at Boroondara, Lal Lal, Epsom, Brunswick, Malvern, and many other places. The excellent specimens of various manufactures shown in the present Exhibition by Mr. A. Murray, Mr. Guthrie, Mr. Cornwall, and others, attest the value of the raw material as well as the skill of those who have been instrumental in their fabrication.

The splendid beds of "kaolin" at Bulla Bulla are about to be utilised, after remaining dormant for many years. Those who remember the Exhibition which was held in Melbourne in 1861, may, perhaps, bear in mind the interesting series of exhibits by the Victorian Kaolin Company, embracing samples of the native clay, as well as its application for various useful purposes, such as ochre, putty, whiting, crayons, washing blue, &c. Subsequently the company did a considerable business in supplying whiting for domestic purposes, and a considerable quantity of the clay was shipped to England and the Continent. However, from some cause or other, probably arising from want of capital, the works were eventually abandoned, and have remained *in statu quo* until recently, when the present lessee of the land, Mr. M. Reynolds, placed some of the kaolin in the hands of Messrs. Flude and Wilson, of Ballarat; these gentlemen, setting to work with skill and diligence, but with very primitive appliances, have turned out the first specimens of chinaware manufactured in Victoria. The illustrations are of a simple kind, but are amply sufficient to show the "kind" and ductile nature of the Bulla clay, and prove that, with proper means for working and burning, excellent chinaware can be produced of a delicate and semi-transparent texture. The present proprietor is now forming a company for erecting suitable kilns, and providing the other necessary plant for carrying on the various branches of china and earthenware manufacture.

Considering the expenses attendant on the importation of pottery, the amount of breakage, and customs duty, there should certainly be room for a local factory, and a large margin of profit to the producer.

TIN.—Stream tin is found in various creeks in the neighbourhood of Beechworth, the Upper Yarra, the Thompson, and Latrobe Rivers.





and in many parts of Gipps Land. Comparatively little attention has hitherto been devoted to its production, but it is hoped that the discoveries of rich deposits of this metal in New South Wales and Queensland, which have given such an impetus to mining in those colonies, will stimulate more active prospecting in Victoria. From the Upper Murray, near Albury, we are likely to be supplied with large quantities of this valuable ore.

**ANTIMONY.**—This ore is found chiefly at Heathcote, but also exists in many other parts of Victoria, amongst others at Whroo, Maldon, Wood's Point, Redcastle, Ballarat, Daylesford, Maryborough, the Upper Murray, Blackwood, Anderson's Creek, and Templestowe. The samples exhibited on the present occasion are by the Costerfield Gold and Antimony Company, through whose agency large quantities have been shipped to England.

There is a growing demand for this mineral, which should be taken advantage of by our mining community. Extensive smelting works have been erected on the Yarra bank for reducing tin, antimony, and other ores.

**COPPER.**—The copper ore from the Thompson's River, Gipps Land, is sufficiently promising to warrant the conjecture that as the mineral resources of that extensive, but almost unexplored, district become developed, we may, ere long, include copper in the list of Victorian exports.

**LEAD.**—The above remarks, with regard to copper, apply to lead ores, which also exist in considerable quantities in Gipps Land.

#### BUILDING STONE.

The large collection of Building Stones, exhibited on the present occasion, includes several specimens hitherto unknown, and therefore entitled to careful examination.

With the exception of granite and basalt (bluestone), Victoria is not so well supplied with building stones as either New South Wales or Tasmania.

**BLUESTONE.**—It would, however, be impossible to discover any single stone adapted for so many useful purposes as our colonial "bluestone." For foundations and massive buildings it is unsurpassed; not a particle of it is wasted, the very siftings being used as a gravel for footpaths. For road metal its utility is well known, large quantities being carried to Sydney as ballast, and used for macadamising the roads of that capital. The basalt from Malmsbury, shown on this occasion, is converted by the Footscray Stone Company into flagging, and makes a better and firmer footpath than any other known pavement.

**GRANITE.**—Granite of excellent quality is abundant at Harcourt, Mount Alexander, Tarrengower, Station Peak, Broadmeadows, the Plenty, Corner Inlet, Mount Eliza, Mount Martha, and many other places. A very fine quality of red syenite is obtainable from Gabo Island. The only drawback to the general use of this "king of the building stones" is the great cost of working it.

**FREESTONE.**—The notice recently issued by the Department of Public Works, inviting proprietors of stone quarries to forward samples of their produce, with a view to being used in some of our public buildings, has doubtless acted as an incentive to the discovery of a suitable material.



The want of a cheap and easily-worked building stone has long been felt, and so far back as 1855, the Government, of which Major Pasley was a member, offered a reward of £1000 for the finding of a first-class building stone. None of the samples sent in were considered up to the required standard, and the highest bonus awarded for the labour and expense of forwarding samples was £200. From that time up to the present no discovery has been made of a building stone so acceptable to the architectural profession as that from Tasmania, of which the General Post Office, the Town Hall, and National Bank are specimens.

Of the Victorian freestones tested by time, that from the Barrabool Hills, near Geelong, appears to stand the best of any used on a large scale. Some of the new specimens shown on the present occasion have all the appearance of being sound and durable, but time and exposure to the elements are the only sure tests of the worth of any building stone, so that it would be mere presumption to pronounce a decided opinion on the strength of a cursory examination of the samples referred to.

In a memorandum appended to a treatise on Australian building stones, read before the Victorian Institute of Architects in 1859, by Mr. J. G. Knight, the following remarks are made:—"With regard to the stones from Bacchus Marsh and Darley quarries, I find that a considerable percentage of both has manifested symptoms of decay, owing to the presence of sulphate of soda and other deleterious salts, in such quantities as to cause rapid exfoliation. On the other hand, all the stone which is free from these salts is in perfect preservation. Time, the infallible test of all constructive materials, has developed certain facts of great economic importance, and I have now no doubt whatever that good durable blocks could be got out of the creek, which runs over a large mass of the Darley stone, as here it would be found that the objectionable salts had been washed away.

"Such extraordinary changes have occurred in stones moved from their native place to another district, country, or different atmosphere, that it should not be taken for granted that a stone which could stand in New Zealand would necessarily do likewise in Victoria. Dearly-bought experience has proved the danger of rushing into the use of a new material on a large scale. Neither the 'scientific' nor the 'practical' man is infallible in his judgment, and no untried stone should be used in a building of any importance, no matter how promising the material might appear, even to the initiated."

Prudence and experience therefore suggest that any newly-developed stone should at first be used in portions only of an inexpensive building, the effects of the weather being carefully noted. It behoves the Public Works Department, as well as the officers of borough and shire councils, to give every "likely-looking" new material a trial, without staking the stability of the entire structure thereon.

**LIMESTONES.**—Limestone of several qualities, for making lime, is not so readily available for building purposes in many of the up-country districts, as clay is for brick making. The result is, that several of the large inland towns are supplied with lime from Melbourne or Geelong.

The principal beds of limestone are near Geelong, Cape Otway, Point



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Nepean, Gipps Land, Muckleford Creek, Mansfield; there are numerous other deposits of limited extent, capable of affording quick-lime for local requirements.

**FLAGGING.**—Good serviceable flagging is furnished from Castlemaine.

**SLATE.**—Slate slabs, and roofing slates, are procurable from Inglewood, Stawell, Beechworth, Gisborne, and other districts, specimens of which are exhibited.

#### COAL.

Notwithstanding that the coal formations of Victoria occupy an estimated area of 3200 square miles, we are up to the present moment dependent on New South Wales for the supply of this invaluable mineral. Prospecting for coal has been carried on with more or less diligence for many years at Traralgon, Gipps Land, Cape Patterson, Griffith's Point, Coal Creek, Bass River, and other places along the coast of Western Port; also in the Barrabool Hills, near Geelong, in the Cape Otway ranges, and at Coleraine, in the Portland district. At the London Exhibition of 1862, Messrs. H. Levy and Sons showed a sample from Cape Patterson, which the jurors noted as being dense and bright. At the Melbourne Exhibition of 1872, coal from the same neighbourhood is shown under what is hoped to be more favourable circumstances, for on this occasion we have a sample of several tons before us, forwarded by an organised company which has already expended a large sum of money in opening up one of the seams, which, so far as at present cleared, is about two feet in thickness. Preparations are being made for laying a tramway from the pits at Kilcunda to Griffith's Point, the place of shipment, a distance of about eight miles, and the company expect to be in a position to send coals to Melbourne in the course of a few months, at about £1 per ton. The quantity of coal annually imported into Victoria is between 150,000 and 200,000 tons.

The quantity raised in Great Britain is estimated at about 100,000,000 of tons per annum. How long the mines will continue to give forth this enormous amount is a question now invoking the serious consideration of scientific men.

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#### BEECHWORTH ATHENÆUM.

1420 Slate, from Bowman's Forest, Beechworth

BOARDMAN, PIERCE, Nunawading.

1420A Antimony

BRIGHT BROTHERS & CO., Crown Star Smelting Works, Sandridge road.

1421 Two Ingots Tin

1422 One set Fireclay Crucibles

1423 One set Plumbago Crucibles

CAWKWELL, ATKINSON HENRY, Tile Manufacturer, Malvern.

1424 Terra Cotta Work

1425 Vases and Trusses

1426 Fire-proof Flooring

- 1427 Flooring Tiles
- 1428 Samples of Clays and Ochres
- 1429 Drain Pipes
- 1430 Gutter Tiles and Bricks
- 1431 Garden Edging

CORNISH, THOMAS, Mining Agent and Share Broker, 34 Hunter-street, Sydney.

- 1433 Sample of Stream Tin from the Victoria Tin Mining Company, Bark Hut Creek, Wellington Vale, New England, New South Wales

CORNWELL, ALFRED, Brunswick.

- 1434 Sewerage Pipes and Pottery Ware

COSTERFIELD GOLD AND ANTIMONY MINING COMPANY,  
Registered, 52 Elizabeth-street, Melbourne.

- 1435 2 Specimens of Antimony Ore, from Costerfield Company's Mine, at Costerfield, near Heathcote
- 1436 1 Specimen Sulphide of Antimony
- 1437 1 „ Oxide of Antimony

DAVEY, W., Beechworth.

- 1437A Samples of Tin and Gold

ECCLESTONE, W., Beechworth.

- 1438 Samples of Tin and Washdirt, from the New Rush, Koetung, Upper Murray

ELDER, HENRY, Bourke-street.

- 1439 Copper Ingot, with Ore Specimens, from Thomson River Copper Mine, Cooper's Creek, Gippsland. First Specimen of Copper (pure) smelted from Victorian Ores in the Colony

GORDON, WILLIAM, Albert-street, Brunswick.

- 1440 Variety of Stoneware Jars, and Samples of Clay

GUTHRIE, GEORGE DUNCAN, Bendigo Pottery, Epsom, near Sandhurst.

- 1441 Pottery Ware
- 1442 Garden Borders
- 1443 Gingerbeer Bottles
- 1444 Wine and Spirit Bottles
- 1445 Butter Pots

HEATHCOTE SHIRE COUNCIL.

- 1446 Specimens of Antimony

HENSLEY, W. G., Reid's Creek, near Beechworth.

- 1447 One Ingot of Tin
- 1448 Two Crystallised Specimens Tin

HODGSON, RICHARD, Antimony Smelting Works, Noone-street, Collingwood.

- 1449 Star Antimony
- 1450 Antimony Ore
- 1451 Tin



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OFFMAN'S PATENT BRICK AND TILE COMPANY, Albert-street, Brunswick.

- 52 Samples of Clay
- 53 Building Bricks
- 54 Paving Bricks
- 55 Fancy Moulded Bricks
- 56 Tier of Brickwork walled in Cement

MACMEIKAN, JAMES, & CO., 32 King-street, Melbourne.

- 57 A Specimen of Native Copper

MANSFIELD SHIRE COUNCIL.

- 58 Bricks from the Brickyards of Messrs. Meachon and Butler, manufactured at £2 per mille

MASON, F. C., M.P., Drummond-street, Carlton.

- 59 Specimens of Iron Ore, from Gippsland.

M'KENZIE, LEWIS, Lilicur, Amherst.

- 30 Sample of Kaolin

TRINDAL SILVER AND LEAD MINING COMPANY, North Gipps Land.

- 30A Ore

MURRAY, ANDREW, 69 Queen-street, Melbourne.

- 31 Samples of White Clay
- 32 White Bricks, made of the Clay, and a Sand found at Balwyn, Boroondara, six miles from Melbourne Post-Office

NOLAN, LUKE, Potter, Brunswick.

- 33 Pottery Ware
- 34 Drain Pipes
- 35 Terra Cotta
- 36 Fancy Ware

COL, TURNER, Miner, Wellington Gold and Tin Mining Company, Eldorado.

- 37 Samples of Tin Ore, from the Wellington Gold and Tin Mining Company, Eldorado

PAUL, W. N., 3 Collins-street West.

- 38 Gold and Silver Lead Ore from Percydale Gold and Silver Mining Company

RINGWOOD ANTIMONY COMPANY, Nunawading.

- 39 Box of Specimens of Antimony

USE OF DENMARK GOLD MINING COMPANY, Gaffney's Creek.

- 39A Auriferous Quartz

SWEDISH CHARCOAL IRON COMPANY, 33 Queen-street.

- 39B Iron Ore, and Iron Manufactured from similar

TASMANIAN CHARCOAL IRON COMPANY (Limited),

36 Collins-street West, Melbourne.

- 70 Sample of Iron Ore from the Tasmanian Charcoal Iron Company, Limited



# TRUSTEES OF THE INDUSTRIAL AND TECHNOLOGICAL MUSEUM.

- 1471 Wall Cabinet
- 1472 Pottery Clays (colonial)
- 1473 Porcellanite Rock
- 1474 Kaolin
- 1475 Modellers' Tools
- 1476 Educational Models
- 1477 Roasting Furnace and Liqutation Hearth
- 1478 Two Diagrams

## UNITED ELDORADO GOLD AND TIN MINING COMPANY, Eldorado.

- 1478a Samples of Tin Ore  
WALHALLA CO., North Gipps Land.
- 1499 Samples of the Dressing and Treating of Auriferous Iron and Arsenical Pyrites
- 1500 Model of Scrapers, &c.  
WALLIS & TURTON, Brunswick.
- 1501 Chesterfield Stoneware Pottery

## CLASS II.—BUILDING STONE.

### EXPERTS :

S. Ramsden, Esq.  
W. W. Wardell, Esq.

Joseph Reed, Esq.  
W. Johnson, Esq.

### BACCHUS MARSH SHIRE COUNCIL.

- 1502 Freestone from Meikle's Quarries, about  $3\frac{1}{2}$  miles from Bacchus Marsh, yellow-veined stone
- 1503 Freestone from Chadwick Quarries, near Myrniong—colour, white
- 1504 Freestone from Dunbar's Quarries, Upper Pentland Hills, about 6 miles from Bacchus Marsh—red, gritty stone

### BALLAN SHIRE COUNCIL.

- 1505 Block of Freestone  
BARNES, WILLIAM, Hodgson-street, Brunswick.
- 1505A White Pipeclay Pressed Bricks
- 1505B Dark Pressed Bricks
- 1505c Ordinary Building Bricks
- 1505D Red Pressed Bricks

### BARRABOOL SHIRE COUNCIL.

- 1506 Cube of Bluestone suitable for building purposes, or for sawing into Flagging. Can be obtained in blocks of large size.  
Locality, Thomson Creek, Parish of Duneed, distant from Geelong 13 miles

### BEECHWORTH EXHIBITION COMMITTEE.

- 1506A Samples of Granite
- BET-BET, SHIRE OF, per GEORGE COOK, Town Clerk, Dunolly.
- 1507 Samples of Granite for building purposes, polished



1. The first part of the document is a list of names and addresses of the members of the committee.

2. The second part of the document is a list of names and addresses of the members of the committee.

3. The third part of the document is a list of names and addresses of the members of the committee.

4. The fourth part of the document is a list of names and addresses of the members of the committee.

- BLIGHT, —, Stonemason, Harcourt.  
 1508 Two Pieces of Granite
- BROWN, GLENBERNIE, Wahgunyah.  
 1509 Stones for sharpening Fine-edged Tools
- CAMPBELL, PATRICK, Sandridge.  
 1509A Sample of Octohedron Stone, discovered in New Zealand
- COMPOSITE PAVEMENT COMPANY, 59 Queen-street, Melbourne.  
 1510 Concrete Pavement (Shepherd's patent)
- CORIO SHIRE COUNCIL.  
 1510A Specimens of Freestone
- EDWARDS, GEORGE, Beechworth.  
 1510B Samples of Slate
- FOOTSCRAY STEAM STONE-CUTTING COMPANY, 38 Queen-street.  
 1511 Sawn Bluestone from Footscray Steam Stone-Cutting Company
- GOULBURN SHIRE COUNCIL, per NICHOLAS DELANEY, President.  
 1512 One sample of Building Stone, Granite
- GRIFFIN, JOHN GEORGE, Civil Engineer, Portland.  
 1513 Freestone, from the Batts Ranges, near Portland
- HAMILTON, DUNDAS, AND MOUNT ROUSE COUNCILS, Hamilton.  
 1514 Stone from Mount Sturgeon, Dunkeld
- HARRISON, JOSEPH H., Brooke-street, Inglewood.  
 1515 A Cube Block of Granite, taken from the quarry at Mount Kooyoorra, ten miles from Inglewood, easily procured and easily worked
- 1516 A Block of Slate, quarried from the Green Hills, two miles from Inglewood, to be had in any quantity and different thicknesses
- HEATHCOTE SHIRE COUNCIL.  
 1517 Four Specimens of Building Stone
- HOLDSWORTH, BENJAMIN, Victoria Quarries, Waurin Ponds.  
 1518 Building Stone from the Victoria Quarries, Waurin Ponds, near Geelong
- HUXLEY & PARKER, Russell-street, Melbourne.  
 1519 Two Statuary Marble Mantelpieces
- 1520 One Queensland Marble Bust Pedestal
- INDIGO UNITED DISTRICT BOARD, Chiltern.  
 1521 Block of Stone, from a quarry situated near the Indigo Creek, by Chiltern, of the same kind as is now used in the third section of North-Eastern Railway
- KILGOUR, ALEXANDER, 8 Cobden-street, Hotham.  
 1522 Piece of Polished Marble, from Mansfield
- M'COMAS, J. W., & CO., 49 King-street, Melbourne.  
 1523a Sample of Stone from Oamaru, N.Z.

## MALMSBURY BOROUGH COUNCIL.

- 1523 A block of Bluestone, worked in various ways

## MANSFIELD SHIRE COUNCIL.

- 1524 Flagstone from a quarry situated on the property of the Honorable Wm. Highett, two miles west of Mansfield, and five miles from the Railway at Longwood
- 1525 Sandstone from a quarry six miles from Mansfield, situated on the property of A. Chennery, Esq.
- 1526 Sandstone from a quarry two miles from Mansfield
- 1527 Sandstone (Red) from a quarry two miles from Mansfield

## OGILVIE &amp; ROBINSON, Geelong.

- 1528 Building Stone from the Moorabool Quarries, 7 miles from Geelong

## ORWIN, THOMAS, Taradale.

- 1529 Basalt, Granite, Quartz, and other Specimens
- 1530 Two Specimens of Building Stone

## PORTLAND SHIRE COUNCIL.

- 1531 A Block of Stone procured from near Portland

## PUBLIC WORKS DEPARTMENT, Melbourne.

- 1532 Building Stone (Freestone)
- 1533 Two Pieces of Granite

## ROSEDALE SHIRE COUNCIL.

- 1534 A Sample of Stone procurable at Rosedale on one of the proposed Railway Lines. Supply, from surface indications, appears to be unlimited

## ST. ARNAUD, BOROUGH COUNCIL OF.

- 1535 Samples of Flagging obtained six miles from St. Arnaud; distance from railway 70 miles

## SEYMOUR SHIRE COUNCIL.

- 1536 Sample of Stone from the Tallarook Ranges, within easy access to the North-Eastern Railway

## STYLES, MURRAY &amp; CO., Avenel.

- 1537 Block of Granite from M'Bean's Quarry, Benalla
- 1538 Eight Bricks, sample of those used on second section of North-Eastern Railway

## SINNETT, G. F., Williamstown.

- 1539 Building Stone

## STAWELL SHIRE COUNCIL.

- 1540 Specimens of Wrought Freestone
- 1541 Slate Flags

TAYLOR, JAMES, Steam Granite Polishing Works, Mitchell-street, Sandhurst.

- 1542 Bust Columns, Polished Granite

## TRUSTEES OF THE INDUSTRIAL AND TECHNOLOGICAL MUSEUM.

- 1543 Limestone.—Dead Bird carved in Limestone, from Omaru, N.Z.



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- 1544 Colonial Building Stones.—Bricks, Tiles, Terra Cotta, Mouldings, &c., displayed on frame of shelves
- 1545 Block of Tasmanian Limestone
- 1546 Block of Granite from Gabo Island
- 1547 Basalt (containing crystals of magnetic pyrites) Specimens, suspended in a glass vase
- THOMPSON, C. G., Beechworth.
- 1548 Specimens of Granite for Road Metal, used by the United Shire of Beechworth
- TRAIN, WILLIAM & CO., New Quay, Melbourne.
- 1549 Willunga Slates and Flagging for building purposes
- WILLIAMSTOWN BOROUGH COUNCIL.
- 1550 Sample Block of Building Stone
- WILSON, CORBEN & CO., Lonsdale-street East, Melbourne.
- 1551 Castlemaine Stone, Bath, Tank, Hearthstone, and two Steps

## CLASS III.—COAL.

## EXPERTS :

W. Meikle, Esq. | A. K. Smith, Esq.

(The following Exhibits, from No. 1552 to No. 1565 inclusive, are exhibited by the TRUSTEES OF THE TECHNOLOGICAL AND INDUSTRIAL MUSEUM, and form part of the Collections of the Technological Museum).

- Coal, worked by J. Mitchell, East Maitland, N.S.W.; seam, 9 ft. 6 in. thick
- 1552 Coal, on Estate of Edward Campbell, Esq., near Singleton, N.S.W. worked by Mr. Elliott; seam, 6 ft. 6 in. thick
- 1553 Coal, worked by Mr. B. Russell, East Maitland, N.S.W., from seam 4 ft. 10 in. thick
- 1554 Coal, worked by Mr. W. Farthing, at Anvil Creek, Branxton, from seam 6 ft. 6 in. thick
- 1555 Coal, section of, from Lambton Colliery, New South Wales, from seam 6 ft. 8 in. thick
- 1556 Show Case of Specimens of Tasmanian Shale and Lignite, tested by Archd. Howden
- 1557 Coal, Block of Tasmanian
- 1558 Coal, sample from seam found at Kilcunda
- 1559 Coal from Cape Patterson, seam 3 ft. 9 in. to 4 ft. 4 in. Presented by Thos. Bury
- Coal from Wanganui, New Zealand, from seam 5 ft. 8 in. thick
- 1560 Kerosene Mineral, and Preparations from. From Hartley, New South Wales
- 1561 Copper Ores from Irwin's River, Western Australia
- LEVI, NATHANIEL, 32 Collins-street West.
- 1566 Two Samples of Coal from Cape Paterson, from 2 ft. 7 in. and 2 ft. seams respectively, of which 2000 tons have been raised to surface

## WESTERN PORT COAL MINING COMPANY.

- 1567 Victorian Coal (five tons), from Kilcunda, the Coal Field of the Western Port Coal Mining Company, at a depth of about fifty feet, seam about two feet

## WINCHELSEA SHIRE COUNCIL.

- 1568 Coal from a Seam at the Coast between Angabook and Loutitt Bay

## SECTION V.—MINERALOGICAL AND NATURAL HISTORY.

## SECTIONAL COMMITTEE:

The Rev. J. I. Bleasdale, Chairman.

The Hon. Robert Ramsay | Sir George Verdon | The Count de Castelnau

## CLASS I.—MINERALOGICAL SPECIMENS.

## EXPERTS:

G. H. F. Ulrich, Esq. | J. C. Newbery, Esq.

It would be presumptuous to do more than cursorily allude, within the limits of a preface, to the three branches of science comprehended in this section. The geological maps, and the collection of mineral rocks and fossils, exhibited by the Mining Department will give visitors to the Exhibition a more varied idea of the distribution, extent, and variety of the mineral wealth of Victoria, than could whole reams of descriptive letter-press. It will be enough for our present purpose to indicate, in a general way, what and where are the chief deposits and how lavishly they have been disseminated throughout the length and breadth of the country. The area of Victoria is roughly estimated to be 86,831 square miles, one-third of which may be pronounced to be auriferous. Only a small portion of that area has been explored, and a still smaller portion effectively "exploited." Even with respect to the latter, science is still in doubt as to the depth to which the gold-bearing rocks extend, and as to the possibility or otherwise of discovering auriferous alluvions at a lower level than the lowest of the deep-lead already worked.

Most of the theories formerly current in Europe with respect to the limited conditions under which gold was supposed to be distributed in its rocky nature, have been disproved by experience in Victoria. To quote the words of Mr. Brough Smyth, "It is found in veins traversing granite and diorite in the granite itself. It has been detected in the planes of bedding of soft yellowish and reddish-brown Silurian claystone, and in sandstone. It occurs in bluish-white plastic silicates, in the veins with carbonate of lime, oxyde of manganese, and carbonate of manganese, and, rarely, with sulphate of barytes. It has been got from the Silurian, the Mesozoic, and the Miocene rocks, as well as from the Pliocene deposits and the soils derived from the breaking up of slates and sandstones." And since the pick and shovel of the miner have thus demolished so many of the ingenious hypotheses of closet philosophers, we must feel that we are admonished not to lay down any authori-





tative data as to where gold will *not* be found, hereafter, in a country so full of anomalies, and so magnificently endowed with mineral wealth as our own. We may justly conclude, also, that we have become acquainted, as yet, with but a portion only of the metals and metallic minerals which nature has been storing up in the subterraneous recesses of the greatest of "the isles of the East:" subterranean recesses which have already proved to be so rich in gold and gems, that the description of Aladdin's wonderful cavern appears trite and prosaic by comparison with the particulars recorded in the official documents issued from the Board of Mines. Gold, silver, zinc, copper, tin, lead, bismuth, iron ore, antimony, sulphur, diamonds, rubies, sapphires, topazes, amethysts, jaspers, and opals; coal and lignite, marble, sandstone, granite, slate, kaolin, and other clays, furnish the leading items only, and by no means make up the complete list of the metals and minerals of Victoria.

The models of several of the largest nuggets of gold which have been found in this colony; the collections of mineralogical specimens contributed from Beechworth, Walhalla, Eldorado, Stawell, St. Arnaud, and Ballarat; and the mining maps and plans exhibited, will enable strangers to obtain some insight into the diversified character of our mineral resources, their *situs* and method of occurrence, and the splendid prizes which fortune has occasionally thrown at the feet of some of her votaries on the goldfields. Of these nuggets the largest and most valuable were the following:—The "Welcome Stranger," found near Dunolly in 1869, weighing 2280 ozs. 10 dwts. 14 grs., value £9534. The "Welcome," found at Bakery Hill, Ballarat, in 1858, weighing 2217 ozs. 16 dwts., value £9325. The "Blanche Barkly," found at Kingower, in 1857, weighing 1743 ozs. 13 dwts., value £6905. Nugget found at Canadian Gully, Ballarat, in 1853, weighing 1619 ozs., value £5532.

The last-named gully has been singularly prolific of heavy lumps of gold, as, irrespective of the above, there were taken from it between the years 1853 and 1854 something less than a dozen nuggets, of the aggregate value of £25,000. The Berlin diggings, near Kingower, have also been the scene of numerous discoveries of the precious metal in large masses. Mr. Brough Smyth enumerates 340, ranging from 1 oz. in weight to 440. At Dunolly the warden has kept a record of about a hundred, each of them exceeding 20 ozs. in weight, while most of them were found at a greater depth from the surface than 60 feet, and 45 of them at less than 16 feet.

Notwithstanding the fact that, since the year 1851, we have exported gold to the value of £165,000,000 sterling, it is acknowledged by those who are competent to pronounce a trustworthy opinion on the subject that the supply is virtually inexhaustible. Accident is constantly revealing fresh deposits; while science and experience are combining to instruct us how we may simplify, cheapen, and improve mining and metallurgical processes, and increase their results. The Secretary for Mines, in his valuable work entitled "*The Goldfields and Mineral Districts of Victoria*," asserts that the minimum of the area within which the miner may prosecute his labours with reasonable prospects of success is certainly not less than 20,000,000 acres, of which considerably

less than 1,000,000 has been explored up to the present time. Therefore the magnitude of the yield, as exhibited by the exports of gold during the last one-and-twenty years, far from being an indication of diminished returns hereafter, points to a still greater development of the leading industry of the colony, by the application to it of better appliances, more skilful systems, and increased capital, seeking a permanent investment in preference to a merely speculative outlay.

Since the Intercolonial Exhibition of 1866-7 some interesting additions have been made to our lists of gems and precious stones. The corundum, sapphire, or crystallised clay, series, has been completed by the discoveries made in 1868 at William Wallace Creek, about fifty miles from Melbourne, during a prospecting search for tin ore, and reported upon by Rev. Dr. Bleasdale, specimens of which will be found among his case of exhibits in the Great Hall. These comprise the true ruby, the oriental amethyst, the oriental aquamarine, and additional samples of the rare oriental emerald. In the former exhibition one of this last kind was shown, which had been found by a digger at Donnelly's Creek, Gipps Land, and attracted much attention. Since then its character has been called in question, but after it had been in the hands of Professor Neil Maskeleyne, of the British Museum, and the mineralogists of the Royal Geological Society, for two years, and not until it had been recut, were they satisfied that this fine stone was what it had been reported to be, and then they pronounced it unique. It is something to say that our colony has yielded what is called on good authority "the rarest of all gems," in a condition of perfection fit to be pronounced "unique." It will be found among Dr. Bleasdale's exhibits.

Some additional fine crystals of blue topaz, of large size, have been found about Talbot. Occasional diamonds have been discovered near Beechworth, but none of much peculiar interest. Among the precious stones suitable for engraving upon, Harry Emanuel, of London, has reported on samples of our red jasper as being even superior to the best Egyptian; and some crests and seals that we have seen cut upon it incline us to believe that the great dealer in gems is right in his opinion. As all the exhibits of this class are not yet opened for display, more cannot be said before the official record and the special essays intended to be drawn up are placed before the public.

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BRACHE, JACOB, 112 Collins-street West.

1570 Twenty Copies of Description of Eldorado Gold and Tin Mines,  
Beechworth District

1571 Four Copies Transactions Mining Institute of Victoria

BROWN, H. Y. L., Melbourne.

1571A Geological Map of Western Australia

DAVEY, WILLIAM, Eldorado.

1572 Samples of Gold and Tin Ore from United Eldorado Claim  
(M'Evoy's), Eldorado





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## DUNN, E. H., Beechworth.

- 1573 Three cases of Beechworth Rocks
- 1573A One case of Clunes and Glengower Rocks
- 1573B " Cassiterite and Carbonate of Bismuth
- 1573C " Cassiterite in Matrix
- 1573D " Beechworth Lignite and Minerals
- 1573E " Auriferous Quartz
- 1573F " Beechworth Clays
- 1573G " Sand
- 1573H " Orthoclase Crystals, Crystallised Quartz, and Mica
- 1573I " Beechworth Crystals
- 1573K " Fossils
- 1573L Mansfield Limestone

## DUNN, WILLIAM, Beechworth.

- 1573M Collection of Native Tomahawks
- 1573N Sharpening Stones and Knives

## KREITMEYER, —

- 1573O Model of the "Blanche Barkly" Nugget

## LONG TUNNEL GOLD MINING COMPANY, Walhalla.

- 1574 Specimens of Quartz, being average Samples from the different Levels

## MINING, DEPARTMENT OF, Melbourne.

- 1575 Models of Nuggets, cast from moulds taken from the originals
- 1576 Geological Sketch Map of Victoria (revised); Map of the Sandhurst Goldfield, showing the Quartz Reefs and Natural Features of the District
- 1577 Auriferous Specimens, Minerals, Rocks, and Fossils, collected in Victoria
- 1878 Geological and Mining Maps of Victoria

## NEW NORTH CLUNES QUARTZ MINING COMPANY, Limited.

- 1579 Quartz Specimens, Pyrites, and Tailings, and Mine Statistics, together with Photograph of Company's Works

## PLEASANT CREEK CROSS REEF QUARTZ MINING COMPANY.

- 1580 Five Quartz Specimens, from above mine, taken from a depth of 660 feet

## ROSEDALE SHIRE COUNCIL, Gippsland.

- 1580A Fossils from Rosedale

## ST. ARNAUD, BOROUGH COUNCIL OF.

- 1581 Quartz Specimens from Rising Star Lode, from Wilson's Hill, and from Silver Mines

## TRUSTEES OF THE INDUSTRIAL AND TECHNOLOGICAL MUSEUM.

- 1582 Models of the Nuggets "Blanche Barkly" and "Welcome"

## WALHALLA GOLD MINING COMPANY, WALHALLA, Walhalla.

- 1583 Statistics

## WINTER'S FREEHOLD GOLD MINING COMPANY, Ballarat.

1584 Photographs and Statistics of the Mine and Machinery

YOUNG, J. D., Running Creek, Beechworth.

1585 Mineralogical Specimens and Samples of Tailings, from Happy Valley Reef, near Beechworth

(The following Exhibits, from No. 1587 to No. 1617 inclusive, are exhibited by the MINING DEPARTMENT, and form part of the Collections of the Technological Museum.)

1587 Colonial Rocks and Minerals.—Two Glass Wall Cases of Miscellaneous Minerals, Rocks, and Fossils, illustrative of the Mineralogy of Victoria

1588 Foreign Rocks and Minerals.—Five Table Cases

1590 Table No. A.—Green carbonates of copper from Carrawang, N.S.W.; copper pyrites, Thompson River

1591 Table No. B.—Illustrating the geology of Smythesdale, containing, among other specimens of interest, molybdenite, coal, and antimony

1592 Table No. C.—Colonial rocks and minerals—kaolin, from Deep Creek and Bulla Bulla (used in earthenware and porcelain manufactures), lignite, antimony from Costerfield, Heathcote; smelted tin, Beechworth; limestone, Benalla

1593 Table No. D.—Gold, Hawthorn Creek; coal, Welshpool; antimony, Mount Useful

1594 Table No. E.—Iron ore, Sandhurst; do., Loddon River; quartz with copper, Kingower; silver ore, St. Arnaud; coal, Western Port; copper ores, Thomson River; native copper, do.

1595 Table No. F.—Black sand, Wodonga; Kaolin, Lal Lal; auriferous granite, Maldon; auriferous sandstone, Rushworth

1596 Table G.—Gems. Exhibit No. 826 in this case is a collection of diamonds, sapphires, ruby, chrysoberyl, spinel, topaz, aquamarine, emerald, tourmaline, garnet, zircon, rock crystal, cairngorm, amethyst, and catseye. These gems were collected and arranged in London by Harry Emanuel, F.R.G.S., and forwarded to the Mining Department by Sir George Verdon. Burnt quartz from Pleasant Creek, showing arsenic and sulphur

1600 Table No. K.—Vegetable caoutchouc (yielding an oil resembling kerosene), near Adelaide; colonial meerschauum; copper ores, New South Wales; kerosene shale, do.; quartz crystals containing gold, Tarnagulla; washdirt from Ballarat companies

1601 Table No. L.—Varieties of coal from New Zealand and Victoria; kaolin from Maldon; rich specimen of antimony and gold, in sandstone

1602 Table No. M.—Minerals from Western Australia—lead, iron, coal, bitumen, galena, native copper, &amp;c.; bismuth ore from South Australia; roofing slate from Gisborne; antimony ores from Whroo; potters' clay from Talbot (very extensive deposits)

1603 Table No. N.—Antimonies, oxides and sulphides, Waranga district; clays, from Smythesdale



1. The first part of the document is a list of the names of the persons who were present at the meeting.

2. The second part of the document is a list of the names of the persons who were absent from the meeting.

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- 1604 Table No. O.—Slates, sandstones, and quartz specimens, from the Comet Company's mine, Sandhurst; do. do., New South Wales

NOTE.—Specimens from No. 759 to No. 774 inclusive illustrate a report on the Boggy Creek goldfield, written by Alfred Howitt, police magistrate and warden at Bairnsdale, and published in *The Goldfields and Mineral Districts of Victoria*, page 121

Specimens from 775 to 788 inclusive illustrate a report on the Chiltern goldfield, compiled by Mr. Arrowsmith, and also published in the above-named work, page 198

- 1605 Table No. P.—Stalactites from Murrumbidgee limestone caves; samples of washdirt from Fryer's Creek, with particulars of their yields; auriferous quartz, and fine samples of iron pyrites, from same place

- 1606 Table No. Q.—Topaz, Maryborough—"A remarkable specimen. It is part of a prism, terminating in a pyramid. The pyramid is formed of a layer of pellucid quartz, superimposed on what resembles an aggregation of grains of sand; but this is probably a deceptive appearance, none of the substances of the prism being amorphous when broken. Found in the alluvial workings on No. 9 Hill, Bealiba (usually known as Cochrane's Diggings). The nearest known quartz reef is distant from the hill about half a mile. The crystals were undoubtedly broken out of a reef, and subsequently transported."

- 1607 Table No. R.—Coals and antimony ores; fossils from the carboniferous formations

#### TRUSTEES OF THE INDUSTRIAL AND TECHNOLOGICAL MUSEUM.

- 1612 Collection of Pebbles, occurring in the older and newer diamond drifts, near Mudgee, New South Wales

- 1613 Gems and other Minerals, do.

- 1614 Mineral Collection, from localities in Victoria

- 1615 Two Cabinets—General Mineral Collection, from various localities, classified in accordance with Dana's system of mineralogy

- 1616 Also, Diamonds, Models of the principal Diamond Gems and celebrated Nuggets, viz.:—"The Welcome," "The Precious," "The Needful," "The Viscount Canterbury," "The Kinn Tow," and others

- 1617 Collection of Quartz, from various parts of Victoria, with descriptive labels, showing the depths at which the specimens were obtained, the yields of the reefs, and other information in detail. This collection affords a readily obtainable mass of statistics, illustrated by the specimens themselves, for the information and guidance of practical and other miners.

The numbers on the specimens refer to the Catalogue, issued by the Mining Department, copies of which can be purchased in the building

- 1618 Block of Iron Pyrites, from Percyvale

## CLASS II.—GEMSTONES.

## EXPERTS :

Dr. Bicasdale | Hon. H. Spensley  
— Crisp, Esq.

## BLEASDALE, THE REV. DR.

- 1569 Native and Foreign Gems and Precious Stones, cut and in the rough  
1586 Colonial and Foreign Gems, collection of, in case arranged by the Rev. Dr. Bleasdale

## DUNN, E. H., Beechworth.

- 1586A Diamonds, Rubies, Sapphires, Zircons, Amethysts, Garnets, Water Stones, &c.

## CLASS III.—NATURAL HISTORY.

Professor McCoy  
Count de Castlenau

Dr. Black  
A. A. C. Le Souef, Esq.

## ACCLIMATISATION SOCIETY, Melbourne.

- 1619 Brown Trout, 3½ years old, weight 7½ lbs., put into a stream by the Acclimatisation Society when a fry

## EXHIBITION COMMISSIONERS, THE.

- 1619A Skins of Native Bears, Platypus, Cat, Kangaroo, Wallaby, and Opossum, viz., three Bear, two Platypus, one Black Cat, six Grey Cat, three Kangaroo, three Wallaby, six Opossum, one Tiger Cat.  
1620 Collection of Edible Fishes of Victoria (12 cases)

## CATALOGUE OF THE EDIBLE FISHES OF VICTORIA.

- 1 Sillago Punctata (Cuv. Val), Whiting
- 2 Cheilodactylus Nigricans (Rich.), Butterfish
- 3 " (Adult)
- 4 Arripis Truttaceus (Cuv. Val.), Salmon Trout
- 5 Cheilodactylus Macropterus (Bloch)
- 6 Callionymus Ocellifer (Cast.)
- 7 Lepidotrigla Vanessa (Rich.), Small Gurnet
- 8 Sphyræna Novæ Hollandiæ (Gunth.), Pike
- 9 Caranx Georgianus (Cuv. Val.), Silver Bream
- 10 Neptonemus Travale (Cast.), Travale
- 11 Rhombosolea Bassensis (Cast.), Sole
- 12 Raya Lemprieri (Rich.), Thornback
- 13 Sebastes Percoides (Rich.)
- 14 Pleuronectes Victoriæ (Cast.), Flounder
- 15 Latris Forsteri (Cast.), Bastard Trumpeter
- 16 Enoplosus Armatus (White), Bastard Dorey
- 17 Olisthrops Cyanomelas (Rich.), Elegant Stranger
- 18 Temnodon Saltator (Bloch), Skip Jack







- 19 *Galaxias Ocellatus* (M'Coy), Yarra Trout
- 20 „ *Attenuatus* (Jenyns), Yarra Gudgeon
- 21 *Genypterus Australis* (Cast.), Rock Ling
- 22 *Anguilla Australis* (Rich.), Eel
- 23 *Chironemus Marmoratus* (Gunth.), Kelpfish
- 24 *Neosebastes Scorpaenoides* (Guich.), Gurnet
- 25 *Cheilodactylus Gibbosus* (Rich.)
- 26 *Arripis Georgianus* (Cuv. Val.), Roughy
- 27 *Neosebastes Scorpaenoides*—young specimen, Gurnet
- 28 *Lates Antarcticus* (Cast.), Sea Perch
- 29 *Apogon Guntheri* (Cast.), Apogon
- 30 *Arripis Truttaceus* (Cuv. Val.) (Adult), Salmon
- 31 *Thyrsites Atun* (Euph), Barracoota
- 32 *Neotepthroeps Zebra* (Rich.), Zebra Fish
- 33 *Glyphisodon Victorice* (Gunth.), Rock Perch
- 34 *Odax Richardsons* (Gunth.), Stranger
- 35 *Gonorrhynchus Greyi* (Rich.), Sand Eel
- 36 *Hemirhamphus Melanocheir* (Cuv. Val.), Gar Fish
- 37 *Chrysophrys Australis* (Gunth.), Bream
- 38 *Upeneichthys Porosus* (Cuv. Val.), Red Gurnet
- 39 *Scomber Antarcticus* (Cast.), Mackerel
- 40 *Neosphyroena Multiradiata* (Cast.), Skip Jack Pike
- 41 *Labrichthys Richardsons* (Cast.), Parrot Fish
- 42 *Pagrus Unicolor* Quoy (Gaim), Snapper
- 43 *Enoplosus Armatus* (White)
- 44 *Lates Colonomus* (Gunth), Gipps Land Perch
- 45 *Murrayia Guntheri* (Cast), Murray Perch
- 46 *Mugil Waigiensis* Quoy (Gaim), Sand Mullet
- 47 *Platycephalus Bassensis* (Cuv. Val.), Common Flathead
- 48 *Neosebastes Scorpaenoides*, Gurnet
- 49 *Pseudophycis Barbatus* (Gunth.), Rock Cod
- 50 *Kathetostoma Læve* (Bl.), Stone Lifter
- 51 *Platycephalus Lævigatus* (Cuv. Val.), Rock Flathead
- 52 *Trigla Polyommata* (Rich.), Flying Gurnet
- 53 *Zeus Australis* (Rich.), John Dorey
- 54 *Histiogaster Recurvirostris* (Rich.), Boar Fish
- 55 *Labrichthys Bleekeri* (Cast.), Parrot Fish
- 56 *Agonostoma Diemensis* (Rich.), Mullet
- 57 *Cristiceps Antinectes* (?) (Gunth)
- 58 *Copidoglanis Tandanus* (Mitch.), Murray Cat Fish
- 59 *Trachurus Trachurus*, Horse Mackerel
- 60 *Mordacia Mordax* (Rich.), Lamprey
- 61 *Latris Hecateia* (Rich.), Hobart Town Trumpeter
- 62 *Therapon Richardsons* (Cast.), Murray Silver Perch
- 63 *Gadopsis Marmoratus* (Rich.), Black Fish
- 64 *Chatoressas Erebi* (Gunth.), Bony Bream
- 65 ~~Dile~~ *Auratus* (Cast.), Murray Gold Perch
- 66 *Seriola Grandis* (Cast.), Yellow Tail
- 67 *Oligorus Macquariensis* (Cuv. Val.), Murray Cod

*Dates in 2nd.*

- 65 *Dules Auratus* (Cast.), Murray Golden Perch
- 66 *Seriola Grandis* (Cast.) Yellow Tail
- 67 *Oligarus Macquariensis* (Cuv. Val.), Murray Cod

FRENCH, CHARLES, Botanic Gardens.

- 1621 Glass case of Stuffed Birds, natives of Victoria

GASKELL, J., 118 Elizabeth-street.

- 1622 Case of Stuffed Birds

HART, HENRY H., 9 & 11 Royal Arcade.

- 1622A Two cases of Birds—Lyre Bird and Lyre Tails

JENKINS, J., 91 Flinders-street East.

- 1622B Case of Stuffed Birds

KEAN, THOMAS, Portland.

- 1623 Petrified Penguin, with one of their eggs found in the cave.

LUCAS, R., Colac.

- 1624 Two Grass Trees

ST. JOHN, FRANCIS, 102 Leicester-street.

- 1625 Case of Stuffed Waterfowl (wild), representing such as are sold in the Melbourne Market

- 1626 Ornamental Umbrella, Hat, and Walking-stick Stand, made of Horns and Tusks of Wild Animals of South Africa—designed and made in Melbourne by the Exhibitor

TAYLOR & SANGSTER, Toorak.

- 1626A Case of Ferns

WITHELL, MRS. MARY, Ballarat.

- 1627 Case of Manna, with insect producing it

- 1627A Case of Ferns

#### INTERNATIONAL EXHIBITION COMMISSIONERS.

- 1628 Birds, indigenous to Victoria, suitable for food

- 1629 Herrings (Specimens)

#### TRUSTEES OF THE INDUSTRIAL AND TECHNOLOGICAL MUSEUM.

- 1630 *Menura Superba* (Lyre bird), in Case

- 1631 Flowers and Ferns, Eight Frames of Coloured Photographs of

- 1632 Trout. Bottle containing the first Trout caught in Victoria. Exhibited by the Acclimatisation Society

- 1633 Collection, showing all the Stages of the Metallurgical Processes used in the Royal Saxon Lead and Silver Works, Frieberg

- 1634 Collection of Raw Iron Ores and Products, German

- 1635 Collection, showing stages of Metallurgical Processes, used in Royal Hanoverian Copper and Lead Smelting Works



1. The first part of the document is a list of the names of the persons who have been named in the proceedings.

- #### CLASS IV.—ABORIGINES AND ETHNOLOGY.

1651 Two Grammars and Vocabularies of the Language of the Aborigines  
of South Australia

## TRUSTEES OF THE NATIONAL GALLERY.

1647 Casts of the Skulls of the Aborigines.

1648 Aboriginal Implements and Weapons

## SECTION VI.—MISCELLANEOUS.

## TRUSTEES OF THE INDUSTRIAL AND TECHNOLOGICAL MUSEUM.

1667 Diagram of s.s. "Great Britain"

1668 Lengthening a Steamer—Photograph illustrating, on Williamstown Patent Slip

1670 Ostrich Feathers and Eggs, Case of (Victorian produce), presented by the Acclimatisation Society

1671 Cabinet of Native Ornaments from South Sea Islands

1672 Zinc—Case of Patterns of Spoutings, Cornices, &amp;c., and Nails and Wires of Zinc, from the Vielle Montagne Zinc Works, near Aix la Chapelle

1673 Ebonite.—Case of various articles of Ebonite Ware, from the factory of Silver and Co., London.

1674 Paper Making.—Six Frames of Specimens of Paper, made from freshwater weed, sage, common grass, Victorian apple-tree, New Zealand flax, mountain ash, stringy bark, swamp tea-tree, bloodwood, blue gum, messmate, melaleuca, common sheoak, woolly but, white gum, acacia, river sheoak, sword rush—and from various vegetable substances in Germany, Switzerland, Japan, Belgium, and France

1675 Drafting and Branding Yards, Models of

1676 Hohn's model of Fire-escape

1677 Native Bread, from Tasmania

1678 Printing Press.—The first used in Victoria, by the late Honourable J. P. Fawkner, 1837

1679 Printing Materials.—Colonial made, presented by F. B. Franklyn

1680 Polytypes.—Colonial

1681 Model in alto of the Island of St. Paul's

1682 Cross Section of the ship "Salamander," as rebuilt in Melbourne







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